COLE AVE - REVERSE STREET FRONTAGE

TRACT NO. 31362
RIVERSIDE, CA

PREPARED FOR:

SHEFFIELD HOMES
3400 CENTRAL AVE - SUITE 325
RIVERSIDE, CA 92506
(909) 682-5352
(909) 682-0162 FAX
CONTACT: BILL WOOLSEY
Email: billw@sheffhomes.com

CONSULTANTS

ENGINEER:

ALBERT A. WEBB
3788 McCRAY STREET
RIVERSIDE, CA 92506
(909) 686-1070
(909) 788-1256 FAX

LEGEND

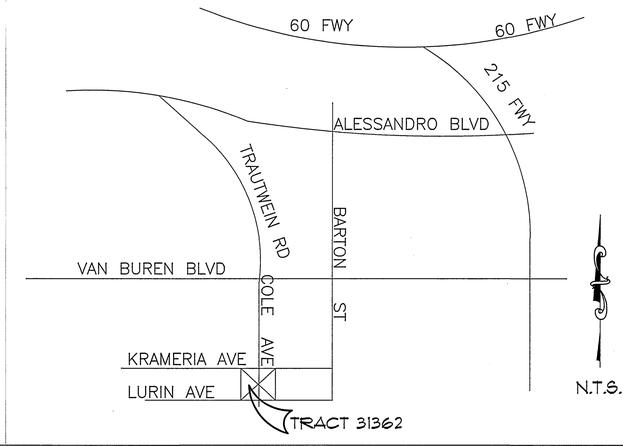
GENERAL NOTES

GENERAL NOTES FOR HOA MAINTAINED PUBLIC LANDSCAPES

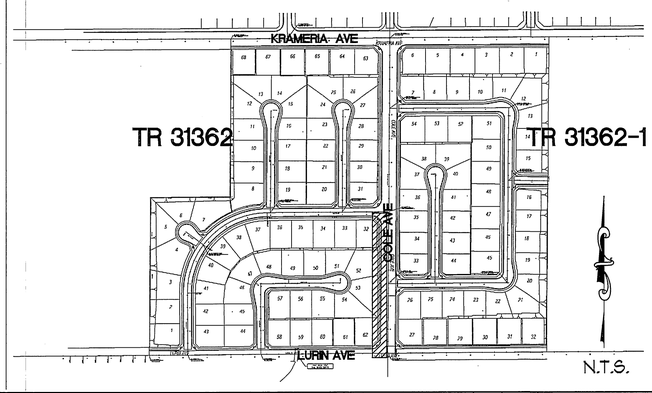
1. ALL RELATED WORK SHALL CONFORM TO THE CITY OF RIVERSIDE PARK AND RECREATION DEPARTMENT STANDARDS AND SPECIFICATION FOR PLANTING AND IRRIGATION WORK. SPECIFICATIONS SECTION 02441 AND 02480).
2. A PUBLIC LANDSCAPE PERMIT, AS ISSUED BY THE PARK AND RECREATION DEPARTMENT IS REQUIRED. CONTACT THE PARK PROJECTS INSPECTOR AT (909) 351-6254 TO SCHEDULE A PRE-CONSTRUCTION MEETING AND OBTAIN THE PERMIT.
3. WHEN CALLING FOR INSPECTIONS CONTACT THE PARK PROJECTS INSPECTOR A MINIMUM OF 48 HOURS IN ADVANCE AT 909.351.6254 TO SCHEDULE AN INSPECTION. A FIELD NOTICE WILL BE ISSUED AS WRITTEN APPROVAL FOR EACH STAGE OF INSPECTION. A VERBAL APPROVAL WILL NOT BE ACCEPTABLE. INSPECTIONS ARE REQ'D PER THE STANDARD SPECIFICATIONS, AND INCLUDE BUT ARE NOT NECESSARILY LIMITED TO THE FOLLOWING:
   a. AFTER COMPLETION OF FINAL GRADING AND WHEN ALL UTILITY SERVICES HAVE BEEN MARKED, BUT PRIOR TO INITIATING ANY LANDSCAPE WORK WITHIN IN THE PUBLIC RIGHT OF WAY.
   b. AT TIME OF INSTALLATION OF IRRIGATION SLEEVES AND CONSTANT PRESSURE MAINLINES, BUT PRIOR TO MAINLINE BACKFILL OF TRENCHES FOR SAME (NOTE: MAINLINES MUST BE PRESSURE TESTED IN THE PRESENCE OF THE PARK PROJECTS INSPECTOR).
   c. AT TIME OF INSTALLATION OF IRRIGATION VALVES, LATERALS AND HEADS.
   d. FOR SPOTTING OF ALL TREES PRIOR TO DIGGING PLANTING PITS.
   e. WHILE DIGGING PLANT PITS AND PLANTING / RELOCATING TREES.
   f. AFTER PLANTING AND ALL OTHER INDICATED OR SPECIFIED WORK HAS BEEN COMPLETED, FOR START OF MAINTENANCE.
   g. AT SUBSTANTIAL COMPLETION OF THE PROJECT FOR CITY'S ACCEPTANCE TO START THE REQUIRED MAINTENANCE PERIOD.
   h. AT THE END OF THE MAINTENANCE PERIOD, THE CONTRACTOR / DEVELOPER SHALL CALL THE PARK PROJECTS INSPECTOR AT (909) 351-6254 FOR FINAL ACCEPTANCE INSPECTION IN ORDER TO BE RELEASED FROM MAINTENANCE. DEVELOPERS BONDS WILL NOT BE RELEASED UNTIL AFTER CITY RECEIPT OF WRITTEN NOTIFICATION FROM THE HOA'S AUTHORIZED REPRESENTATIVE THAT THE HOA IS ASSUMING MAINTENANCE RESPONSIBILITIES, AND THE CITY'S ISSUANCE OF WRITTEN NOTIFICATION TO THE DEVELOPER THAT THE PROJECT HAS PASSED FINAL INSPECTION.
4. THE DEVELOPER SHALL BE RESPONSIBLE TO ACCEPTABLY MAINTAIN ALL PUBLIC LANDSCAPE PLANTINGS FOR A MINIMUM PERIOD OF ONE YEAR.

NOTE: IN THE INTEREST OF PUBLIC SAFETY AND MAINTENANCE, THE PARK PROJECT INSPECTOR SHALL HAVE THE AUTHORITY TO REVISE THE TREE QUANTITIES AND LOCATIONS SHOWN ON APPROVED PLANS BASED UPON FILED CONDITIONS FOUND AT THE TIME OF INSTALLATION OF THE TREES.

VICINITY MAP



KEY MAP



SHEET INDEX

SHEET	DESCRIPTION
L-1	COVER SHEET
L-2	IRRIGATION PLAN
L-3	IRRIGATION PLAN
L-4	IRRIGATION DETAILS
L-5	IRRIGATION SPECIFICATIONS
L-6	PLANTING PLAN
L-7	PLANTING PLAN\ DETAILS
L-8	PLANTING SPECIFICATIONS

LANDSCAPE QUANTITIES FOR REFERENCE ONLY
24" BOX TREES - TOTAL 10
LANDSCAPE AREA - 4,025 S.F.

PLANNING DEPARTMENT APPROVAL
DESIGN REVIEW CASE NO. P03-0710
APPROVED BY _____
DATE _____

CALL BEFORE YOU DIG
DIG ALERT
DIAL TOLL FREE
1-800-422-4133
AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

PREPARED FOR:
SHEFFIELD HOMES
3400 CENTRAL AVE - SUITE 325
RIVERSIDE, CA 92506
(909) 682-5352
(909) 682-0162 FAX
CONTACT: BILL WOOLSEY

CITY OF RIVERSIDE
PUBLIC UTILITIES ELECTRIC
SIGNED _____ DATE 7/6/04

REGISTERED LANDSCAPE ARCHITECT
JOSE A. ESTRADA
No. 2754
RENEWAL 08/31/2005
STATE OF CALIFORNIA

HERMANN & ASSOCIATES
30 BELMONTE DRIVE
PALM DESERT, CA
92211
LIC# 2754
PH. (760) 776-0940
FAX (760) 776-0950
CONTACT: JOSE A. ESTRADA

MARK	REVISIONS	APPR.	DATE

DESIGNED BY JE DRAWN BY JE CHECKED BY _____

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE
DEPUTY P.W. DIRECTOR		
PRINCIPAL ENGINEER		
CHIEF P.W. INSPECTOR		
WATER PURVEYOR		
ELECTRIC PURVEYOR		
PLANNING DEPARTMENT		
PARKS DEPARTMENT		7/15/04

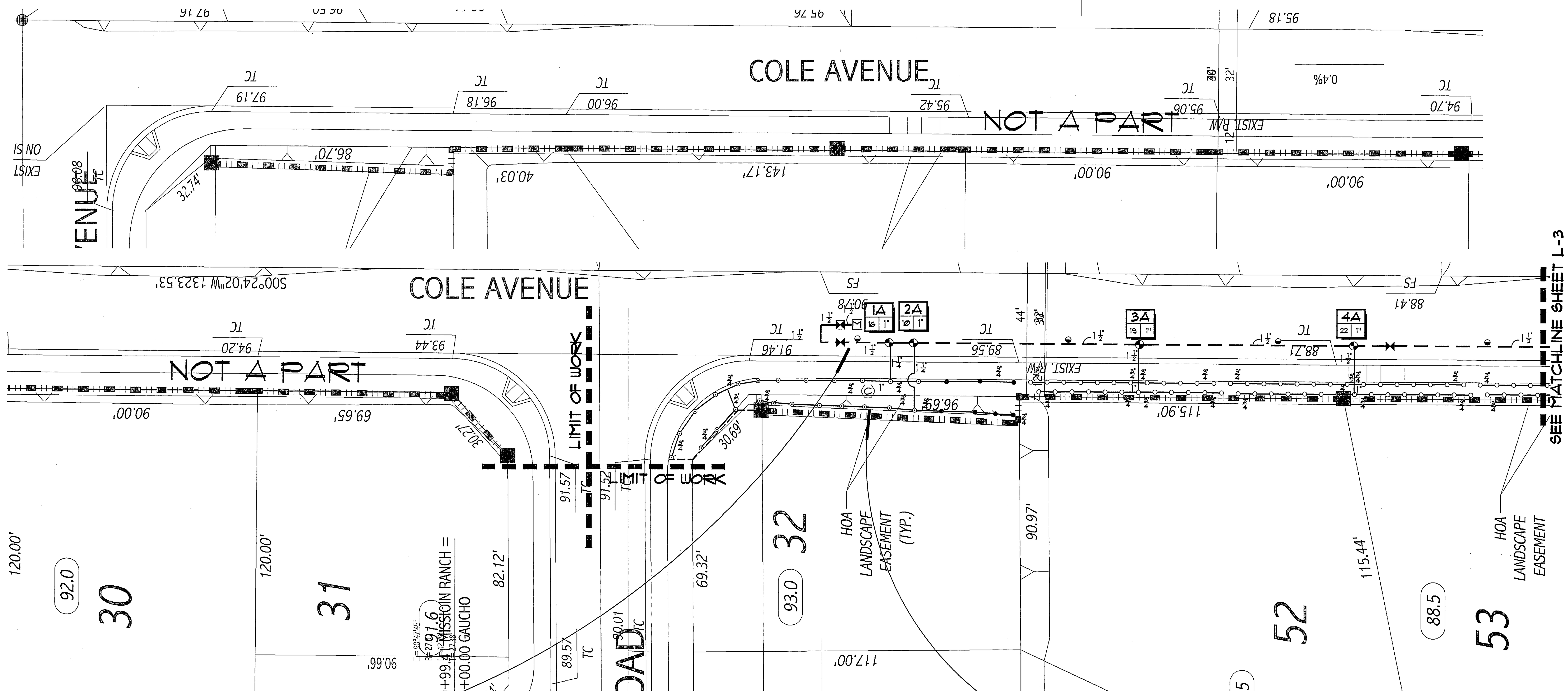
APPROVED BY _____ PUBLIC WORKS DIRECTOR
DATE 8/4/04

LANDSCAPE IMPROVEMENT PLANS
TRACT 31362
COLE AVE
REVERSE FRONTAGE LANDSCAPE
COVER SHEET
HORIZ. SCALE: NTS VERT. SCALE:

ACCT. NO. R-3790-L
SHEET L-1 OF 8

PC-4404-R2/PRP04-0001

PLOT DATE: 6/2/04 File: TR 31362 _IR.dwg INDEXED 9-23-04 GH



POINT OF CONNECTION

CONTRACTOR SHALL MAKE POINT OF CONNECTION AT AT PROPOSED 1" WATER METER BY OTHERS. INSTALL BACKFLOW AND EXTEND MAINLINE TO VALVES, AS SHOWN.

WATER METER SIZE ________ 1"
WATER METER NO. ________
WATER METER ADDRESS ________
PEAK IRRIGATION DEMAND ____ 18 GPM
STATIC WATER PRESSURE ____ 75 PSI MIN. REQ.
SYSTEM DESIGN PRESSURE ____ 62 PSI

WATER PURVEYOR - WESTERN MUNICIPAL WATER DISTRICT

AUTOMATIC CONTROLLER

CONTROLLER SHALL BE A RAINBIRD ESP MC - 24 STATION IRRIGATION CONTROLLER. INSTALL CONTROLLER INSIDE A STAINLESS STEEL ENCLOSURE (REFER TO LEGEND FOR TYPE). 120 VOLT ELECTRICAL POWER SHALL BE PROVIDED BY ELECTRICIAN. CONTRACTOR SHALL VERIFY THE ACTUAL LOCATION OF CONTROLLER AND POWER SUPPLY PRIOR TO STARTING WORK.

ELECTRIC METER SIZE ________ 20
ELECTRIC SERVICE ADDRESS ________
SERVICE VOLTAGE : 120/240V 1 PHASE 3W

AS-BUILT INFORMATION TO BE PROVIDED BY CONTRACTOR
(REF. DWG. ULS-644008 SHT. 2 OF 3)

EQUIPMENT LEGEND

SYMBOL	MANUFACTURER/MODEL *	SIZE	DETAIL
	1" WATER METER		
	NIBCO T-580 BALL VALVE 2" AND SMALLER NIBCO BUTTERFLY VALVE FOR 2½" AND LARGER	LINE SIZE	4052
	RAINBIRD #44LRC SERIES QUICK COUPLING VALVE	1"	4050
	FEBCO 825YA REDUCED PRESSURE TYPE BACKFLOW PREVENTER	11/4"	4011
	RAINBIRD PESB SERIES REMOTE CONTROL VALVE	PER PLAN	4030
	RAINBIRD ESP-MC SERIES AUTOMATIC IRRIGATION CONTROLLER INSTALL IN MANUF. VANDAL RESISTANT STAINLESS STEEL ENCLOSURE BY STRONG BOX INSTALL RAIN SHUT OFF DEVICE W/ RAIN GUARD MODEL RG-DCC BY WCS	12 STA.	4062 4070
= = =	SCH 80 PVC IRRIGATION PIPE / SEPARATE SCH. 40 WIRE SLEEVE	2X LINE SIZE	4010
NOT SHOWN	UF RATED CONTROL WIRE, 12 GA COMMON, 14 GA PILOT	12/14 GA	4010
— — —	SCH 40 PVC 1½" AND SMALLER, CLASS 315 PVC 2" AND LARGER PRESSURED IRRIGATION MAINLINE	PLAN SIZE	4010
———	SCH 40 PVC IRRIGATION LATERAL LINE, PER PLAN	PLAN SIZE	4010

SPRINKLER LEGEND

SYMBOL	MANUFACTURER/MODEL *	NOZZLE	RAD.	PSI	FLOW (GPM) Q	H	F	VAN		DETAIL	NOTES
	RAINBIRD 1812-SAM-PRS-8	Q/H/F/V	8'	30	.39	.79	1.58	.53		4040	
	RAINBIRD 1812-SAM-PRS-10	Q/H/F/V	10'	30	.39	.79	1.58	.53		↓	
	RAINBIRD 1812-SAM-PRS-12	Q/H/F/V	12'	30	.39	1.3	2.6	1.3		↓	
	RAINBIRD 1812-SAM-PRS-15	Q/H/F/V	15'	30	.93	1.85	3.7	1.85		↓	

NOTE (TYPICAL)
1) CONTRACTOR SHALL ADJUST HEADS WHEN VERTICAL OBJECTS (TREES, FIRE HYDRANTS, STREET LIGHTS, ETC.) INTERRUPT THE SPRAY PATTERN OF THE SPRINKLER. THE CONTRACTOR SHALL INSTALL A QUARTER OR HALF CIRCLE SPRINKLER HEAD TO ACHIEVE HEAD TO HEAD COVERAGE. ALL ADJUSTMENTS SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER.

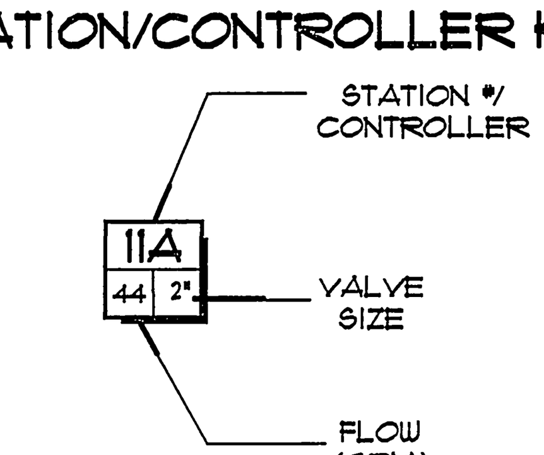
REFER TO CITY STD. IRRIGATION DETAILS

REFER TO CITY IRRIGATION SPECIFICATION 02441 STANDARD.

SCH 80 PVC SLEEVING CHART

1 1/4" SLEEVE	1-4 WIRES	1/2" PIPE
1 1/2" SLEEVE	5-10 WIRES	3/4" PIPE
2" SLEEVE	11-20 WIRES	1" PIPE
2 1/2" SLEEVE	21-30 WIRES	1 1/4" PIPE
3" SLEEVE	31-40 WIRES	1 1/2" PIPE
4" SLEEVE	41-60 WIRES	2" PIPE
6" SLEEVE	61-99 WIRES	2 1/2"/3" PIPE
8" SLEEVE	100+ WIRES	4" PIPE
10" SLEEVE	N/A	6" PIPE

STATION/CONTROLLER KEY



PRESSURE LOSS CALCULATIONS
(VALVE # 2A @ 10 GPM)

LOSS THRU 1" WATER METER	0.7 PSI
LOSS THRU 11/4" R/P DEVICE	11.0 PSI
LOSS THUR 708' 11/2" MAIN	2.10 PSI
LOSS THRU GATE VALVES	3.0 PSI
LOSS THRU 1" VALVE	2.9 PSI
LOSS THRU LATERAL LINES	2.7 PSI
SUBTOTAL	22.4 PSI
MISC. LOSS THRU FITTINGS- 10%	2.24 PSI
TOTAL SYSTEM LOSSES	24.64 PSI
PRESSURE REQUIRED AT HEAD	30.0 PSI
PRESSURE REQUIRED	54.64 PSI
STATIC PRESSURE	75 PSI
RESIDUAL PRESSURE	20.36 PSI

0' 20' 40' 60'

PC-4404-R2/PRP04-0001

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RIVERSIDE, CA 92506
(909) 682-5352
(909) 682-0162 FAX
CONTACT: BILL WOOLSEY

CITY OF RIVERSIDE
PUBLIC UTILITIES ELECTRIC
SIGNED 7/6/04 DATE

REGISTERED LANDSCAPE ARCHITECT — STATE OF CALIFORNIA — 2004 — 6/2/04

HERMANN & ASSOCIATES
30 BELMONTE DRIVE
PALM DESERT, CA 92211
LIC# 2754
PH. (760) 776-0940
FAX (760) 776-0950
CONTACT: JOSE A. ESTRADA

MARK	REVISIONS	APPR.	DATE
△			

DESIGNED BY — DRAWN BY - CHECKED BY ____

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE
DEPUTY P.W. DIRECTOR		
PRINCIPAL ENGINEER		
CHIEF P.W. INSPECTOR		
WATER PURVEYOR		
ELECTRIC PURVEYOR		
PLANNING DEPARTMENT		
PARKS DEPARTMENT		07/15/04

APPROVED BY
PUBLIC WORKS DIRECTOR
DATE 8/6/04

LANDSCAPE IMPROVEMENT PLANS
TRACT 31362
COLE AVE
REVERSE FRONTAGE LANDSCAPE
IRRIGATION PLAN
HORIZ. SCALE: 1" = 20' VERT. SCALE:

ACCT. NO.
R-3790-L
SHEET L-2 OF 8

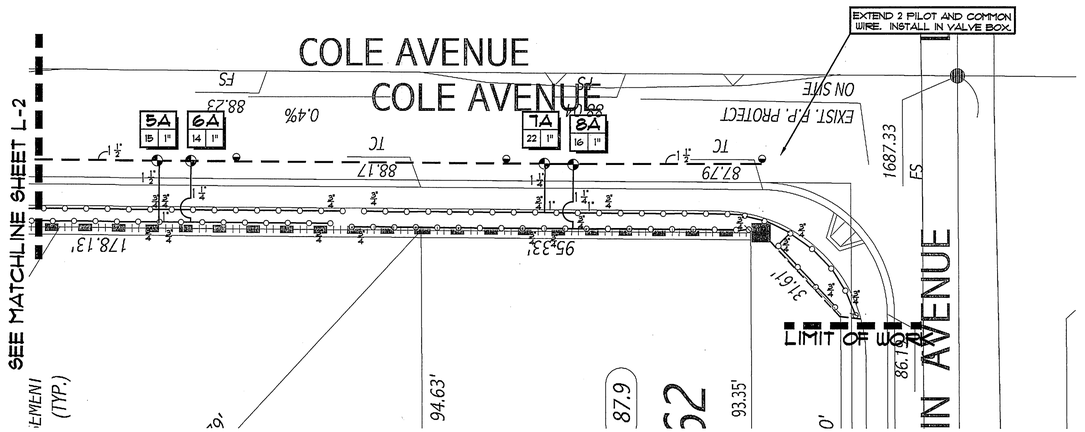
RJZ

PLOT DATE: 6/2/04

File: TR 31362 _JR.dwg

INDEXED 9-23-04 LH

PRESSURE LOSS CALCULATIONS (VALVE @ 1A @ 16 GPM)	
LOSS THRU 1" WATER METER	1.8 PSI
LOSS THRU 1 1/4" R/P DEVICE	11.0 PSI
LOSS THUR 715' 1 1/2" MAIN	6.36 PSI
LOSS THRU GATE VALVES	3.0 PSI
LOSS THRU 1" VALVE	2.9 PSI
LOSS THRU LATERAL LINES	3.8 PSI
SUBTOTAL	28.86 PSI
MISC. LOSS THRU FITTINGS- 10%	2.88 PSI
TOTAL SYSTEM LOSSES	31.74 PSI
PRESSURE REQUIRED AT HEAD	30.0 PSI
PRESSURE REQUIRED	61.74 PSI
STATIC PRESSURE	75 PSI
RESIDUAL PRESSURE	13.26 PSI



EQUIPMENT LEGEND

SYMBOL	MANUFACTURER/MODEL #	SIZE	DETAIL
M	1" WATER METER		
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	FEBCO 825YA REDUCED PRESSURE TYPE BACKFLOW PREVENTER	1¼"	4011
	RAINBIRD PESB SERIES REMOTE CONTROL VALVE	PER PLAN	4030
	RAINBIRD ESP-MC SERIES AUTOMATIC IRRIGATION CONTROLLER INSTALL IN MANUF. VANDAL RESISTANT STAINLESS STEEL ENCLOSURE BY STRONG BOX. INSTALL RAIN SHUT OFF DEVICE W/ RAIN GUARD MODEL RG-DCC BY WCS	12 STA.	4062 4070
	SCH 80 PVC IRRIGATION PIPE / SEPARATE SCH. 40 WIRE SLEEVE	2X LINE SIZE	4010
NOT SHOWN	UF RATED CONTROL WIRE, 12 GA COMMON, 14 GA PILOT	12/14 GA	4010
	SCH 40 PVC 1½" AND SMALLER, CLASS 315 PVC 2" AND LARGER PRESSURED IRRIGATION MAINLINE	PLAN SIZE	4010
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SPRINKLER LEGEND

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	RAINBIRD 1812-SAM-PRS-10	Q/H/F/V	10'	30	.39	.79	1.58	.53		
	RAINBIRD 1812-SAM-PRS-12	Q/H/F/V	12'	30	.39	1.3	2.6	1.3		
	RAINBIRD 1812-SAM-PRS-15	Q/H/F/V	15'	30	.93	1.85	3.7	1.85		

NOTE (TYPICAL)
1) CONTRACTOR SHALL ADJUST HEADS WHEN VERTICAL OBJECTS (TREES, FIRE HYDRANTS, STREET LIGHTS, ETC.) INTERRUPT THE SPRAY PATTERN OF THE SPRINKLER. THE CONTRACTOR SHALL INSTALL A QUARTER OR HALF CIRCLE SPRINKLER HEAD TO ACHIEVE HEAD TO HEAD COVERAGE. ALL ADJUSTMENTS SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER.

REFER TO CITY STD. IRRIGATION DETAILS
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SCH 80 PVC SLEEVING CHART		
1 1/4" SLEEVE	1-4 WIRES	1/2" PIPE
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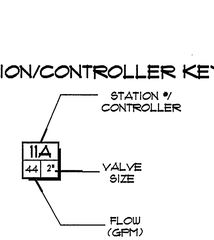
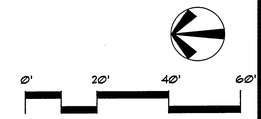
3" SLEEVE	31-40 WIRES	1 1/2" PIPE
4" SLEEVE	41-60 WIRES	2" PIPE
6" SLEEVE	61-93 WIRES	2 1/2"/3" PIPE
8" SLEEVE	120+ WIRES	4" PIPE
10" SLEEVE	N/A	6" PIPE

STATION/CONTROLLER KEY





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CITY OF RIVERSIDE
PUBLIC UTILITIES ELECTRIC
SIGNED 7/6/04 DATE

REGISTERED LANDSCAPE ARCHITECT JOSE A. ESTRADA No. 2754 6/21/04 STATE OF CALIFORNIA

HERMANN & ASSOCIATES
30 BELMONTE DRIVE
PALM DESERT, CA 92211
LIC# 2754
PH. (760) 776-0940
FAX (760) 776-0950
CONTACT: JOSE A. ESTRADA

MARK	REVISIONS	APPR.	DATE

DESIGNED BY — DRAWN BY — CHECKED BY

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE
DEPUTY P.W. DIRECTOR		
PRINCIPAL ENGINEER		
CHIEF P.W. INSPECTOR		
WATER PURVEYOR		
ELECTRIC PURVEYOR		
PLANNING DEPARTMENT		
PARKS DEPARTMENT		

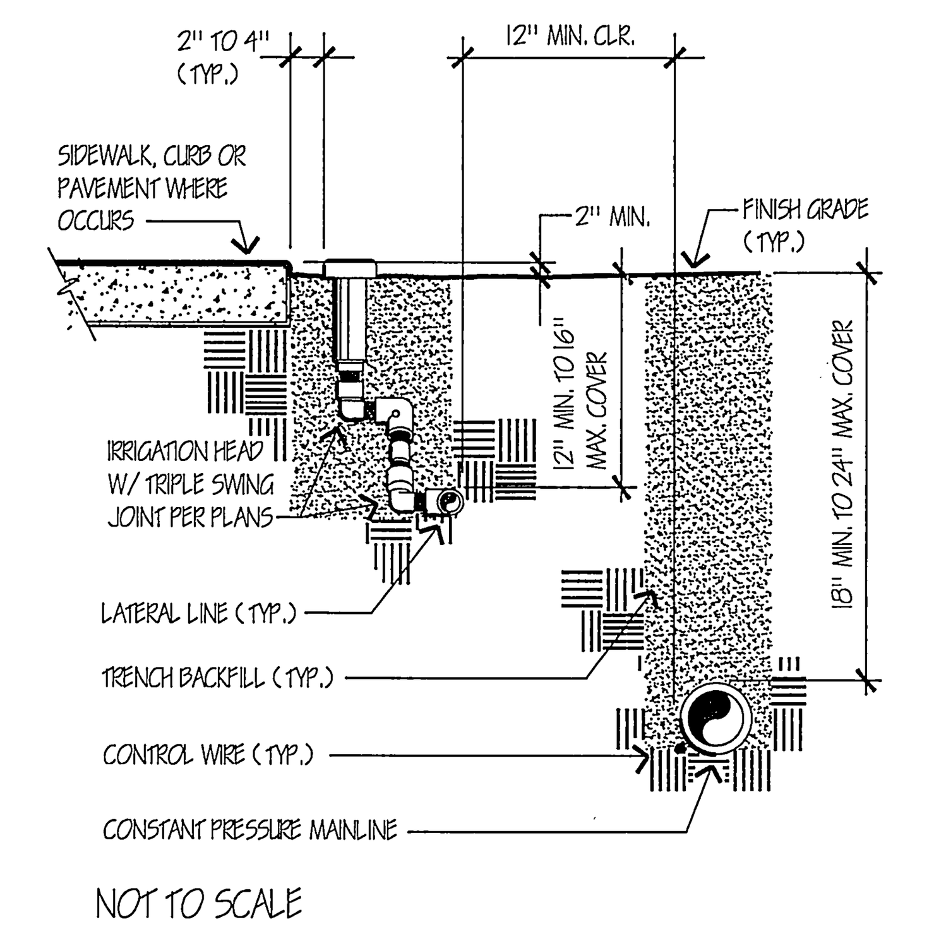
APPROVED BY
PUBLIC WORKS DIRECTOR
DATE 8/6/04

LANDSCAPE IMPROVEMENT PLANS
TRACT 31362
COLE AVE
REVERSE FRONTAGE LANDSCAPE
IRRIGATION PLAN
HORIZ. SCALE: 1" = 20' VERT. SCALE:

ACCT. NO. R-3790-L
SHEET L-3 OF 8

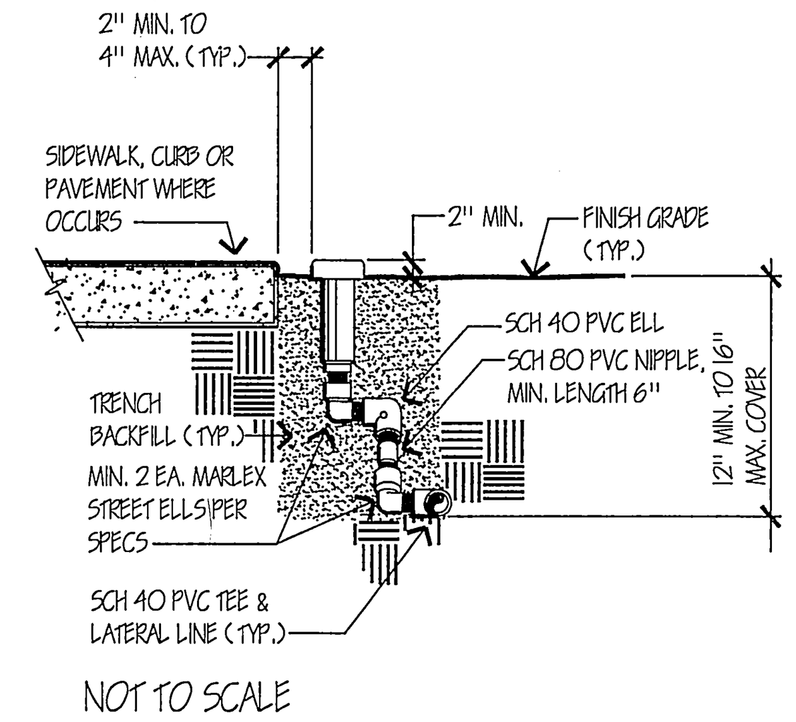
PC-4404-R2/PRP04-0001

PLOT DATE: 6/2/04 File: TR 31362 _IR.dwg INDEXED 9-23-04 GH



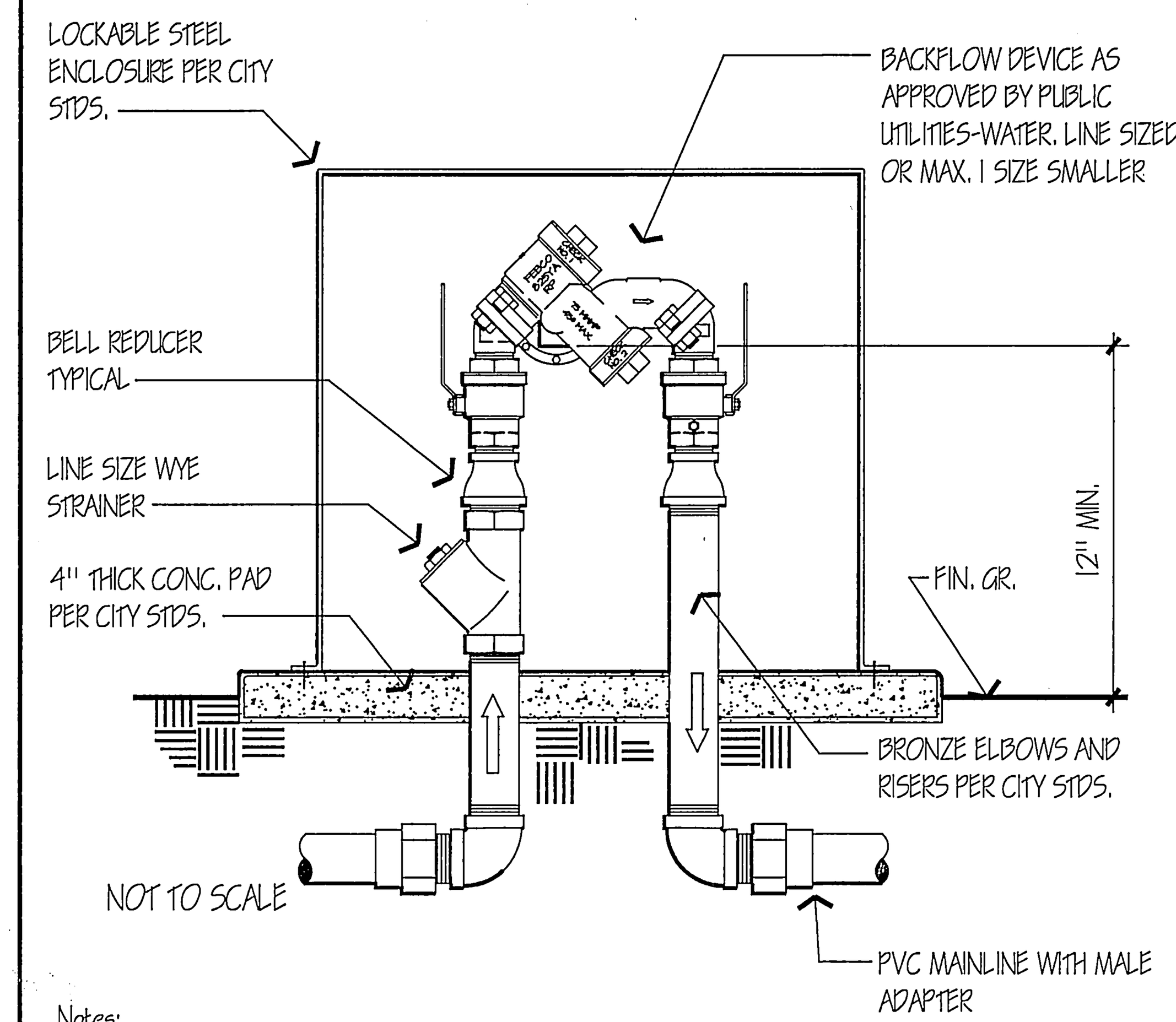
NOT TO SCALE

Approved	Date	Park and Recreation Department CITY OF RIVERSIDE	Detail No.
BJ	08/28/03		4010
Revised	Date	**TRENCH AND LINE PLACEMENT**	



NOT TO SCALE

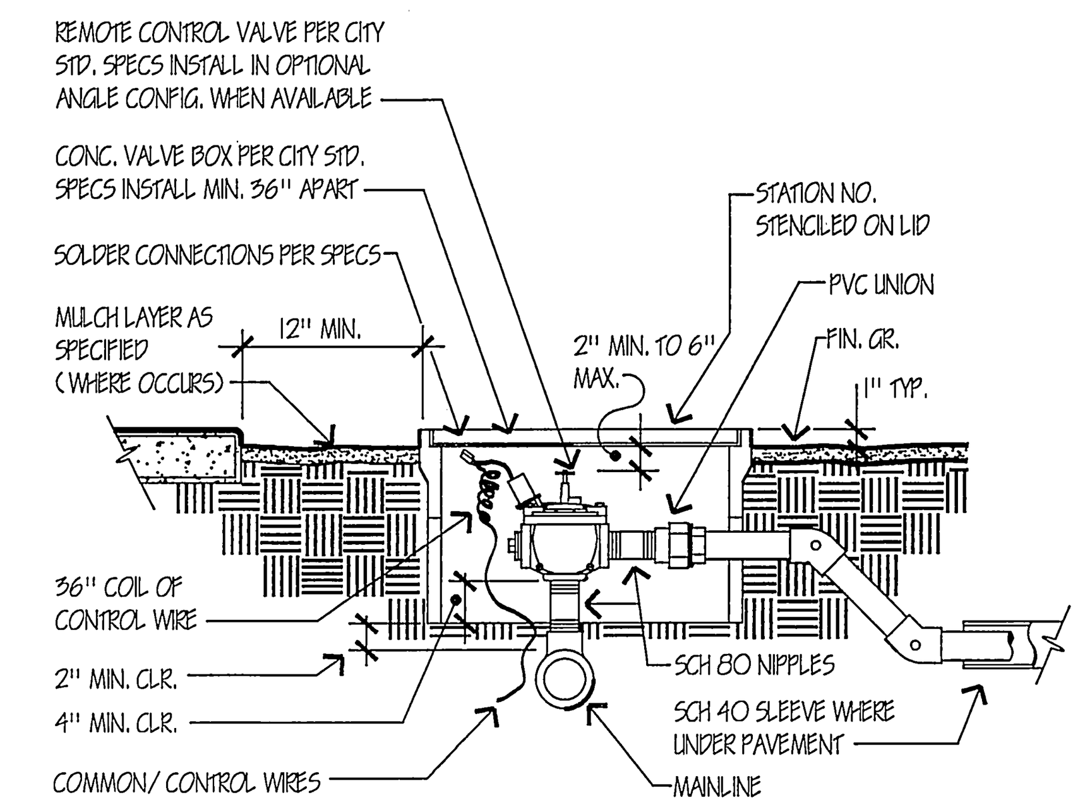
Approved	Date	Park and Recreation Department CITY OF RIVERSIDE	Detail No.
BJ	08/28/03		4040
Revised	Date	**IRRIGATION SPRAY HEAD**	



NOT TO SCALE

Notes:
1) Install backflow device square with hardscape elements as approved by the Park Projects Inspector in the field.
2) Coordinate with Public Utilities-Water for location of backflow and water service. Wherever possible, locate service and backflow in the parkway at mid-block a minimum of 150' from the BCR at the nearest intersection per City standards.

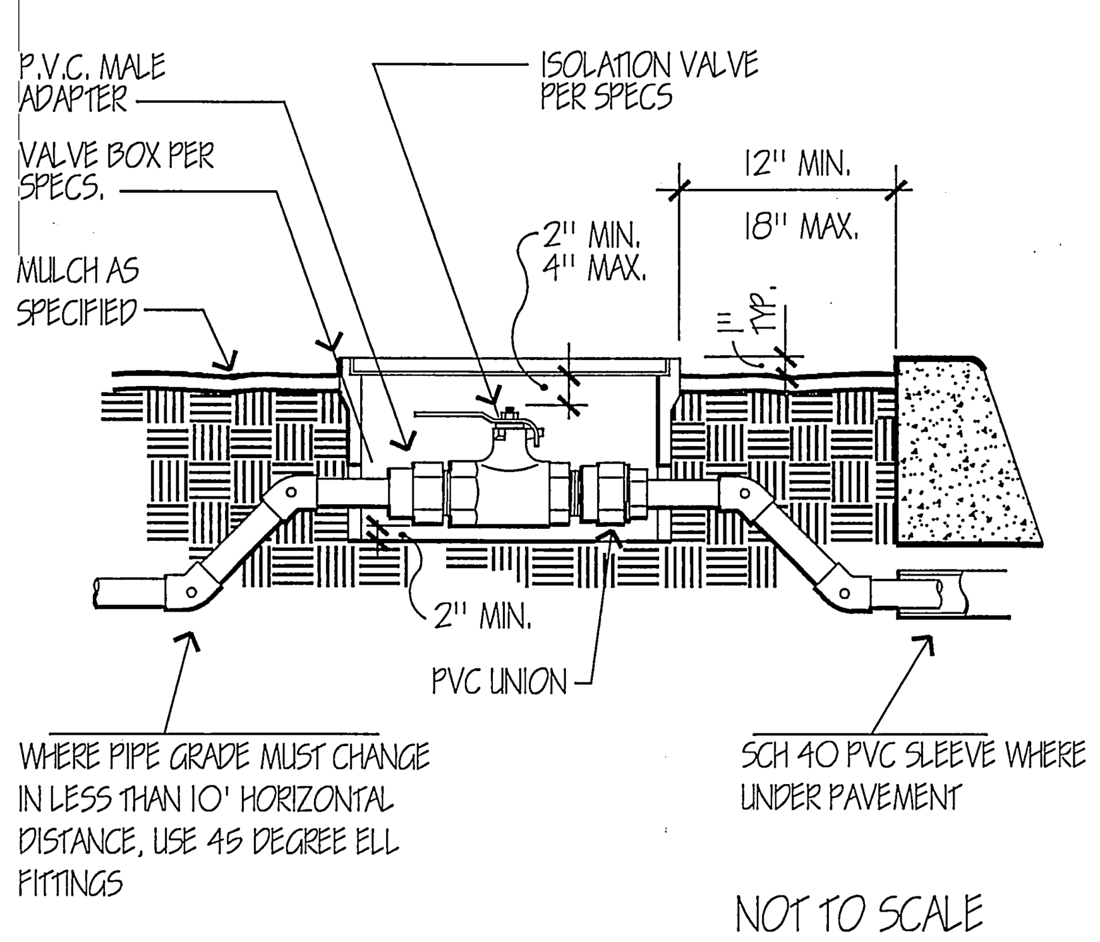
Approved	Date	Park and Recreation Department CITY OF RIVERSIDE	Detail No.
BJ	08/28/03		4011
Revised	Date	**REDUCED PRESSURE BACKFLOW DEVICE**	



NOTES:
1) EACH VALVE SHALL HAVE ITS OWN TEE OR ELL CONNECTION TO THE MAINLINE. NO MANIFOLD CONNECTIONS.
2) PROVIDE MINIMUM 3' CLEAR DISTANCE BETWEEN VALVES.
3) INSTALL VALVE BOX SO THAT BOX DOES NOT REST ON ANY IRRIGATION LINES.
4) PROVIDE STAMPED BRASS TAG 1/ 2" BY 1" W/ 1/ 4" HIGH SEQUENCE NUMBER ON ALL CONTROL WIRES.
5) WHERE PIPE DEPTH MUST CHANGE IN LESS THAN 10' HORIZONTAL DISTANCE, USE 45 DEGREE ELBOWS.

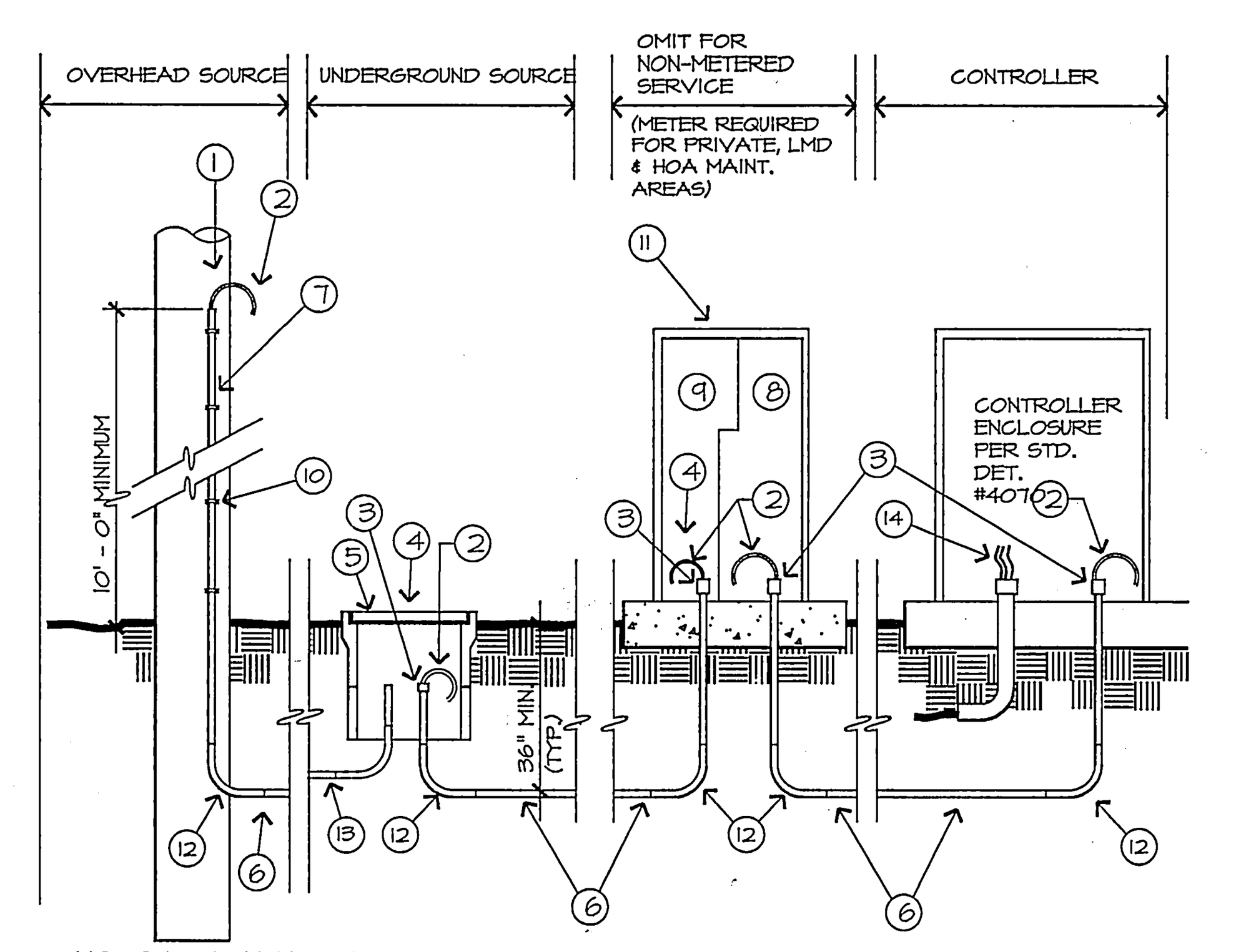
NOT TO SCALE

Approved	Date	Park and Recreation Department CITY OF RIVERSIDE	Detail No.
BJ	08/28/03		4030
Revised	Date	**REMOTE CONTROL VALVE**	



NOT TO SCALE

Approved	Date	Park and Recreation Department CITY OF RIVERSIDE	Detail No.
BJ	08/28/03		4052
Revised	Date	**ISOLATION VALVE IN BOX**	

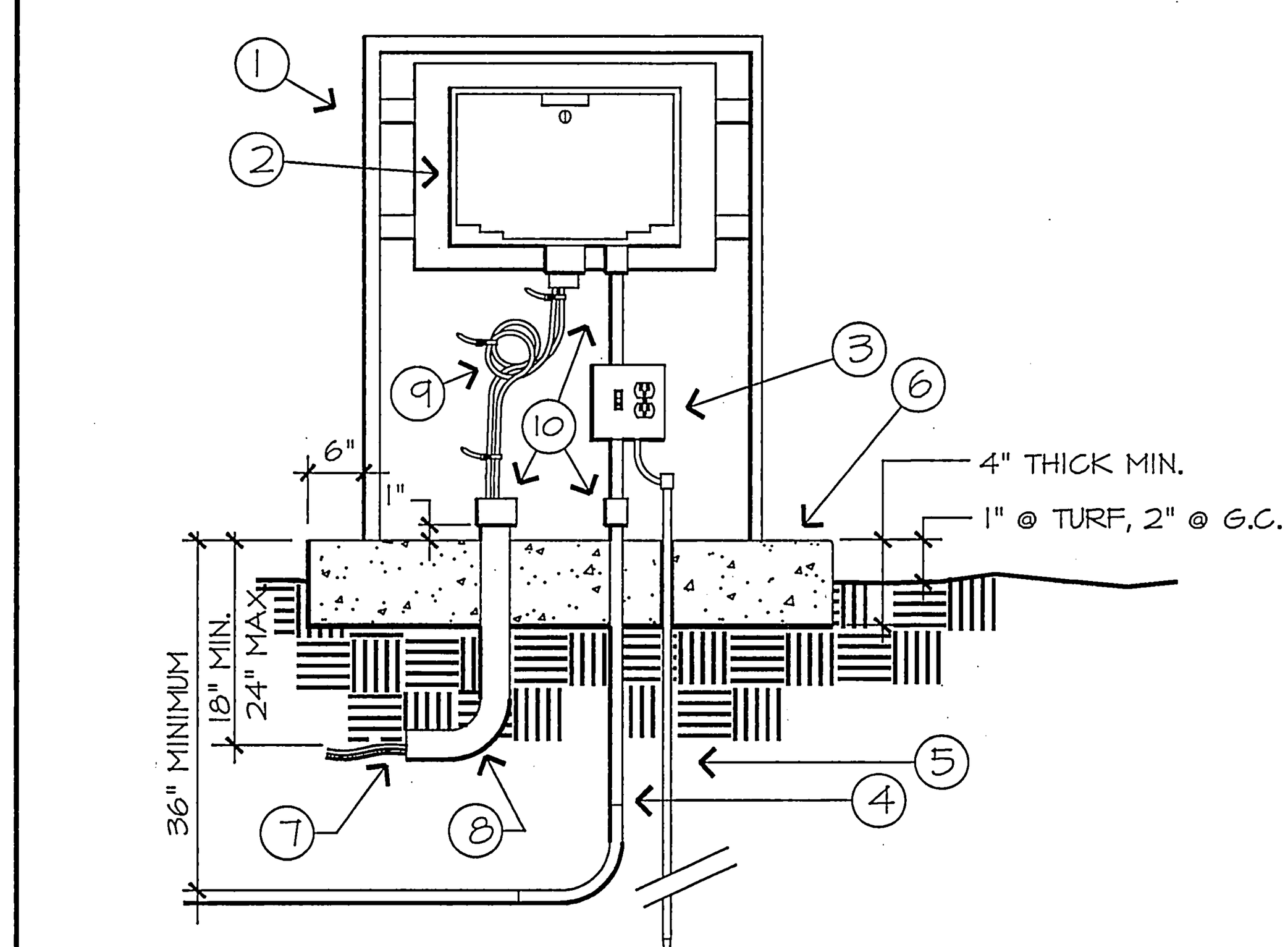


CONSTRUCTION NOTES:

NOT TO SCALE

1. COORDINATE W/UTILITIES-ELECTRIC(909/826-5343) FOR RISER LOCATION ON POLE.
2. 3-#8 CU THW WIRES. CONTRACTOR TO PROVIDE SUFFICIENT WIRE LENGTH BEYOND END OF CONDUIT TO REACH OVERHEAD SECONDARY LINES FOR OVERHEAD SERVICE AND TO PROVIDE 2 FEET OF WIRE BEYOND CONDUIT END AT UGS BOX & 4 FEET OF WIRE AT METER AND CONTROLLER. ID NEUTRAL.
3. PROVIDE INSULATING BUSHING, TERMINATE CONDUIT PER UTILITIES SPEC. UGS-311.
4. P.U. ELECTRIC WILL MAKE SERVICE CONNECTIONS IN UGS BOX FOR NON-METERED SERVICE, AND WILL MAKE CONNECTIONS AT UGS BOX AND SERVICE SIDE OF METER FOR METERED SERVICES.
5. ELECTRIC SERVICE BOX, SIZE PER PUBLIC UTILITIES STANDARDS.
6. MIN. 2" SERVICE CONDUIT PER CITY STDS.; DB BELOW GRADE, HDG ABOVE GRADE, HDG WRAPPED SWEEPS.
7. LINE SIZE HDG CONDUIT WITH 3-#8 CU THW WIRES, PER UTILITIES STANDARDS. ID NEUTRAL.
8. LOAD SECTION.
9. SERVICE SECTION.
10. MINIMUM 3 PIPE STRAPS.
11. METER PEDESTAL PER EUSERC DRAWING #308. SUBMIT CATALOG CUTS TO P.U.-ELECTRIC FOR APPROVAL PRIOR TO INSTALLATION.
12. LINE SIZE WRAPPED HDG SWEEP ELL, MIN. 9" RAD. (TYP.)
13. EXISTING SERVICE CONDUIT.
14. LOW VOLTAGE IRRIGATION CONTROL WIRE & CONDUIT PER P&R STD. SPECS.

Approved	Date	Park and Recreation Department CITY OF RIVERSIDE	Detail No.
BJ	05/01/02		4062
Revised BJ Rev. Conductors	Date 08/28/03	**ELECTRIC SERVICE** NON-METERED (CITY MAINTAINED)/METERED (HOA MAINTAINED)	

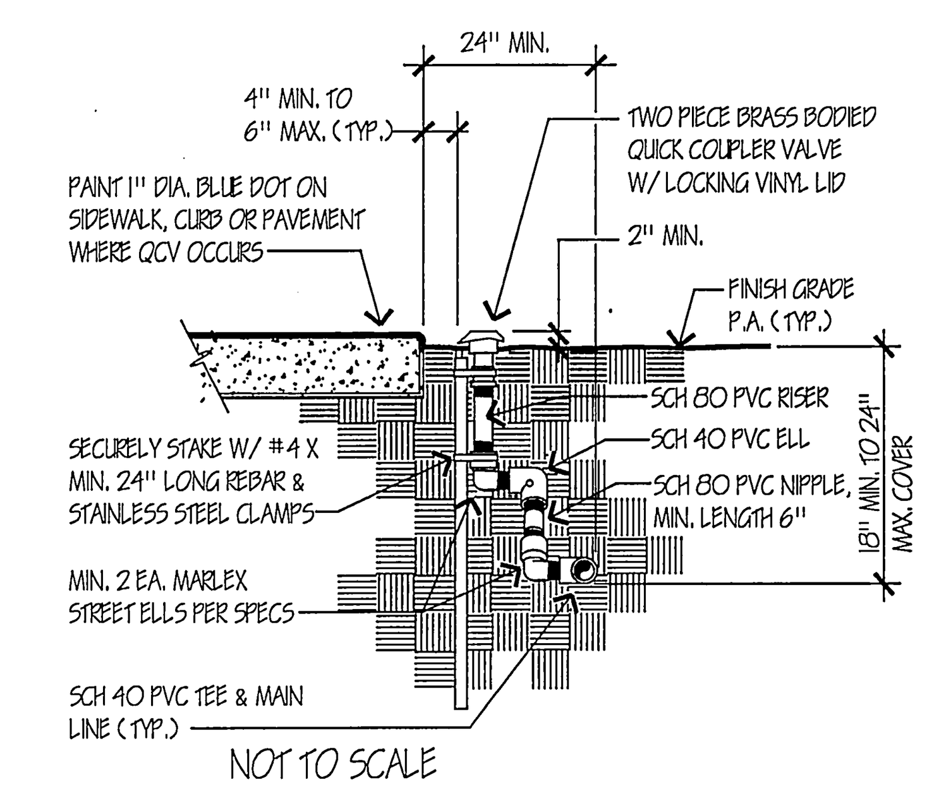


NOT TO SCALE

CONSTRUCTION NOTES:

1. STRONG BOX STAINLESS STEEL ENCLOSURE, MODEL SIZED TO FIT CONTROLLER, WITH SERVICE ADDRESS STENCILED ON LOCKING HINGED DOOR. SECURELY ANCHOR ENCLOSURE TO CONCRETE PAD.
2. WEATHER PROOF AUTOMATIC CONTROLLER, SECURELY WALL MOUNTED TO ENCLOSURE.
3. SQUARE D BREAKER BOX MODEL Q02-4L70S, OR APPROVED EQUAL WITH SINGLE 15 AMP BREAKER AND DUPLEX OUTLET. MAKE 120 V POWER AND GROUND CONNECTION AT BREAKER BOX. MOUNT IN ENCLSOURE.
4. 3-#8 CU THW WIRES IN MIN. 2" SCH 40 PVC CONDUIT FROM CONTROLLER TO POWER SOURCE. BOND SERVICE TO BREAKER BOX.
5. #8 CU COPPER GROUND WIRE AND 5/8" BY 8' LONG DRIVEN COPPER GROUNDING ROD WITHIN ENCLOSURE. DRIVE ROD PRIOR TO INSTALLATION OF ENCLOSURE.
6. CONCRETE PAD, EXTEND SUFFICIENT DISTANCE IN FRONT OF ENCLOSURE TO ALLOW UNOBSTRUCTED AREA FOR DOOR SWING FREE OF PLANTINGS, 6" MIN. BEYOND ENCLOSURE ON ALL OTHER SIDES.
7. LOW VOLTAGE DIRECT BURIAL WIRES TO CONTROL VALVES.
8. 90° WRAPPED HDG SWEEP ELL, SIZED TO FIT WIRE FOR NUMBER OF STATIONS ON THE CONTROLLER, PLUS SPARES AND COMMON.
9. THREE FOOT EXPANSION LOOP OF CONTROL WIRE, NEATLY LACED WITH ZIP-LOCKS. MAKE CONNECTION DIRECTLY TO IRRIGATION CONTROLLER TERMINALS FOR 12 STATION & SMALLER. USE TERMINAL STRIPS FOR CONTROLLERS LARGER THAN 12 STATIONS.
10. PROVIDE INSULATING ELECTRICAL BUSHINGS AT CONTROLLER AND END OF CONDUITS.

Approved	Date	Park and Recreation Department CITY OF RIVERSIDE	Detail No.
BJ	05/01/02		4070
Revised BJ - Rev. Conductors	Date 11/21/02	**IRRIGATION CONTROLLER**	



NOT TO SCALE

Approved	Date	Park and Recreation Department CITY OF RIVERSIDE	Detail No.
BJ	08/28/03		4050
Revised	Date	**QUICK COUPLER VALVE**	

DIG ALERT
DIAL TOLL FREE
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AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

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SHEFFIELD HOMES
3400 CENTRAL AVE - SUITE 325
RIVERSIDE, CA 92506
(909) 682-5352
(909) 682-0162 FAX
CONTACT: BILL WOOLSEY

CITY OF RIVERSIDE
PUBLIC UTILITIES ELECTRIC
SIGNED [signature] DATE 7/6/04

REGISTERED LANDSCAPE ARCHITECT — STATE OF CALIFORNIA — 6/2/04

HERMANN & ASSOCIATES
30 BELMONTE DRIVE
PALM DESERT, CA
92211
LIC# 2754
PH. (760) 776-0940
FAX (760) 776-0950
CONTACT: JOSE A. ESTRADA

MARK	REVISIONS	APPR.	DATE
△			

DESIGNED BY ___ DRAWN BY ___ CHECKED BY ___

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE
DEPUTY P.W. DIRECTOR		
PRINCIPAL ENGINEER		
CHIEF P.W. INSPECTOR		
WATER PURVEYOR		
ELECTRIC PURVEYOR		
PLANNING DEPARTMENT		
PARKS DEPARTMENT	[initials]	7/15/04

APPROVED BY [signature]
PUBLIC WORKS DIRECTOR
DATE 8/11/04

LANDSCAPE IMPROVEMENT PLANS
TRACT 31362
COLE AVE
REVERSE FRONTAGE LANDSCAPE
IRRIGATION DETAILS

HORIZ. SCALE: NTS VERT. SCALE:

ACCT. NO.
R-3790-L
SHEET L-4 OF 8

PC-4404-R2/PRP04-0001

PLOT DATE: 6/2/04 File: TR 31362 _IR.dwg INDEXED 9-23-04

IRRIGATION
SECTION 02441

PART 1 – GENERAL

1.01 STANDARD SPECIFICATIONS: The provisions of the "Standard Specifications for Public Works Construction", current edition, shall apply except as modified herein.

1.02 SCOPE: The Work of this Section shall consist of furnishing all labor, materials, equipment, appliances and services necessary for the execution and completion of all Irrigation Work as shown on the Plans and as described in the Specifications including, but not necessarily limited to, the following:

Provide complete operating irrigation systems;
Installation of new and refurbishment of existing irrigation systems as necessary to provide complete operating irrigation systems for all planting areas;
120 volt electrical service for and connection to the controller;
Coordination with work of other Sections;
Testing;
Clean–up;
Replacements, Repairs, Guarantees and Warranty Work.

1.03 RELATED WORK:

Planting 02480

1.04 SUBMITTALS:

A. Materials List: The Contractor shall submit a complete materials list for approval by the City prior to performing any Work. Catalog data and full descriptive literature must be submitted whenever the use of items different than those specified is requested. Notarized certificate must be submitted by plastic pipe and fitting manufacturer indicating that material complies with the Project Specifications, unless material has been previously approved, and used on other projects by the City.

Material list shall be submitted using the following format:

Item	Description	Manufacturer	Model No.
1.	Pressure Supply Line	Lasco	Sch. 40
2.	Shrub Head	Rainbird	1800
etc.	etc.	etc.	etc.

B. "Record" Prints:

1. Record accurately on one set of blue–line prints all changes in the Work constituting departures from the original Contract Drawings, including changes in pressure and non–pressure line locations.
2. The changes and dimensions shall be recorded in a legible and workmanlike manner to the satisfaction of the City. Prior to final inspection of the Work, submit "record" prints to City for approval.
3. Dimension from two permanent points of reference (buildings, monuments, sidewalks, curbs, pavement, etc). Date to be shown on "record" prints shall be recorded day–to–day as the project is being installed.
4. Show locations and depths of the following items:

a. Point of connection.
b. Routing of irrigation pressure lines (dimension maximum 100 feet along routing).
c. Gate valves.
d. Irrigation remote control valves.
e. Quick coupling valves.
f. Routing of control wires.
g. Related equipment (as may be directed).

5. Maintain record prints on site at all times.

1.05 INSPECTIONS:

A. Inspections will be required for:

1. Pressure test of irrigation main line.
2. Coverage test.
3. Final inspection/start of maintenance.
4. Final acceptance.

B. Inspection Requests: Contractor shall notify the Park Projects Inspector in advance for requesting all inspections as follows:

Pressure supply line installation and testing – 36 hours (1–1/2 working days)
System layout – 36 hours (1–1/2 working days)
Coverage tests – 36 hours (1–1/2 working days)
Final Inspection – 48 hours (two working days)

When inspections have been conducted by other than the Park Projects Inspector, the Contractor shall show evidence of when and by whom these inspections were made.

No inspection is to commence without "record" prints available on the site. In the event the Contractor calls for an inspection without up to date "record" prints, without completing previously noted corrections, or without preparing the system for inspection, the inspection may be canceled and the Contractor back charged for the direct costs of all City personnel time and consultant time lost, at the discretion of the Parks Department Representative.

C. Closing in Uninspected Work: Do not allow or cause any of the Work of this Section to be covered up or enclosed until it has been inspected, tested and approved by the City.

D. Coverage test: When the irrigation system is completed, the Contractor shall perform a coverage test in the presence of the City to determine if the water coverage for planting areas is complete and adequate. This test must be accepted by the City before planting can commence.

E. Hydrostatic test:

1. Prior to the installation of any valves, all pressure lines shall be tested under a hydrostatic pressure of 150 psi for a period of not less than two hours, with all ends of lines capped and the line fully charged with water after all air has been expelled from the line.
2. All hydrostatic tests shall be made in the presence of the Park Projects Inspector or his designated representative. No pressure line shall be backfilled until it has been inspected, tested, approved in writing, and the mainline and valve locations have been noted on the "record" prints.
3. The Contractor shall furnish the necessary force pump and all other test equipment, and shall perform the test.

1.06 TURNOVER ITEMS:

A. Controller Charts:

1. "Record" prints must be approved by the Park Planning Coordinator before charts are prepared.
2. Provide one controller chart for each automatic controller. The chart shall show the entire area covered by the controller, preferably in a single sheet. The chart shall be a reduced copy of the approved "record" print. Reduce the print to a size that is the maximum dimensions that will fit within the controller door without folding. If the controller sequence is illegible at this reduction scale, the chart may be provided as a "multi–sheet" chart to provide adequate legibility.
3. Each control station on the Chart shall be marked with a different color to show its area of coverage.
4. When completed and approved, the chart shall be hermetically sealed between two pieces of plastic, each piece being minimum 20 mils in thickness. The chart shall be installed in the controller enclosure using Velcro fasteners, and three different color grease pencils (red, black and blue) shall be provided in the enclosure for maintenance notations on the chart.
5. Controller charts shall be completed prior to the final acceptance inspection.

B. Operation and Maintenance Manuals: Within a minimum of 14 calendar days prior to acceptance of construction, prepare and deliver to the City all required descriptive materials, properly prepared in two individually bound copies of the operation and maintenance manual. The manual shall describe the material installed and shall be in sufficient detail to permit operating personnel to identify, operate, and maintain all equipment. Spare parts lists and related manufacturer's information shall be included for each equipment item installed. Each complete, bound manual shall include the following information:

1. Index sheet stating Contractor's address and telephone number, including names and addresses and telephone numbers of local manufacturer's representatives.
2. Complete operating and maintenance instructions on all major equipment.

C. Materials to be furnished: Supply as part of this Contract the following items:

1. 4% additional irrigation heads of each type and spray pattern shown.
2. Two (2) special tools/wrenches for disassembly and adjustment of each type irrigation equipment/heads installed that require such special tools/wrenches.
3. Two keys for each type of automatic controller.
4. Two quick coupler "quills" with a 3/4" bronze hose bib, bent nose type with hand wheel and two quick coupler locking lid keys.
5. One valve box cover key.
6. "Record" prints.
7. Remove and turn over backflow device valve handles.
8. Documentation of Water Department's inspection and acceptance of backflow device.

The above items shall be turned over to the City for transmittal to the HOA at the conclusion of the Project – Final Acceptance Inspection.

1.07 GUARANTEE:

A. General: The entire irrigation system, including all Work done under this Contract, shall be guaranteed against all defects and fault of material and workmanship for a period of one (1) year following Final Acceptance of the Work as documented by the written acceptance of the HOA as filed with the City. All materials used shall carry a manufacturer's guarantee of one (1) year.

Should any problem with the irrigation system be discovered within the guarantee period, it shall be corrected by the Contractor at no additional expense to the HOA within fourteen (14) calendar days of receipt of written notice from the HOA. When the nature of the repairs as determined by the HOA constitute an emergency (e.g. broken pressure line) the HOA may proceed to make repairs at the Contractor's expense. Any and all damages to existing improvement resulting either from faulty materials or workmanship, or from the necessary repairs to correct same, shall be repaired to the satisfaction of the HOA by the Contractor, all at no additional cost to the HOA.

B. Form of Guarantee: Guarantee shall be submitted on Contractors own letterhead as follows:

GUARANTEE FOR IRRIGATION SYSTEM

PROJECT: _____

LOCATION: _____

We hereby guarantee the irrigation system we have furnished and installed against defects in materials and workmanship, ordinary wear and tear and unusual abuse, or neglect excepted, and that the Work has been completed in accordance with the Plans and Specifications. We agree to repair or replace any or all of the Work, together with any other adjacent Work which may be displaced by so doing, that may prove to be defective in its workmanship or materials within a period of one (1) year after the date the HOA's acceptance of the above named project, at no additional cost to the HOA. We shall make such repairs or replacements within 14 calendar days following written notification by the HOA. When the immediate repair or replacement of the Work is necessary to ensure the public safety and welfare, which would be endangered by continued usage of the facility, such circumstance will be deemed an operational emergency. In the event of such an emergency, after the HOA contacts our firm and after authorizing 24 hours to initiate repairs, if we fail to initiate and diligently complete such repairs in a timely manner, the HOA may direct HOA forces to perform such functions as the HOA may deem necessary to correct the Work and immediately place the facility back in operational condition. If such procedure is implemented, we shall bear all expenses incurred by the HOA. In all cases, the judgment of the Director shall be final in determining whether an operational emergency exists. In the event of our failure to make such repairs or replacements within the time specified after receipt of written notice from the City (other than an operational emergency), we authorize the HOA to proceed to have said repairs or replacements made at our expense and we will pay the costs and charges therefor upon demand.

SIGNED: _____

ADDRESS: _____

PHONE: _____

C. Operational Instruction: After the system has been completed, the Contractor shall instruct the HOA Representative in the operation and maintenance of the system and shall furnish a complete set of operating instructions.

D. Trench Settlement: Any settling of trenches which may occur during the one–year period following acceptance shall be repaired to HOA's satisfaction by the Contractor without any additional expense to the HOA. Repairs shall include the complete restoration of all damage to planting, paving or other improvements of any kind as a result of the Work.

PART 2 – MATERIALS

2.01 GENERAL: All materials shall conform with Section 212 – LANDSCAPE AND IRRIGATION MATERIALS of the Standard Specification except as modified herein.

2.02 BACKFLOW PREVENTION DEVICE: Add the following to Standard Specifications Section 212–2.3 Backflow Preventer Assembly: The backflow prevention unit shall be a reduced pressure type vacuum breaker of the size, manufacture, and model number as indicated on the Plans. If not indicated, the device shall be the same size as the water service and the manufacturer and model number shall be as approved by the City.

2.03 CONTROLLER UNIT: Add the following to Standard Specifications Section 212–3.3 Controller Unit:

A. Controllers shall be wall mounted type, as indicated on the Plans, with a heavy duty watertight case and locking hinged cover.

2.04 ELECTRICAL MATERIALS:

A. Conduit: Amend Standard Specifications Section 212–3.2.1 Conduit to read: All conduit below grade shall be schedule 40 PVC of sufficient size to carry all proposed wiring. Conduit above grade shall be galvanized steel per the Standard Specifications. Low Voltage (24 volt) wiring shall be provided with a separate conduit/sleeve from both high voltage wiring (110/120 volt and higher) and the irrigation mainline sleeve. Wiring shall be in a separate sleeve.

B. Electrical Service: Materials for electrical service shall comply with the standard specifications, governing utility agency standards, and requirements of all applicable codes.

C. Wire: Add the following to Standard Specifications Section 212–3.2.2 Conductors:

All low voltage conductors shall be 14 gauge for control and 12 gauge for common wires. All low voltage common wire shall be white with a colored stripe. Stripe color shall be different for each controller installed. All low voltage control wire shall be of one color other than white or green. A different color control wire shall be used for each controller installed.

2.05 IRRIGATION HEADS: All irrigation heads shall be as shown on the Plans and shall conform with Section 212–2.4 of the Standard Specifications.

2.06 PIPE AND FITTINGS:

A. Pipe – General:

1. Pressure supply lines 2 inches in diameter and up to 8 inches in diameter shall be either Class 315 solvent weld PVC or Class 200 rubber gasket type PVC. Solvent weld and ring type pipe shall not be used together on the same pressure supply line.
2. Pressure supply lines 1–1/2 inches in diameter and smaller shall be minimum schedule 40 PVC.
3. Non–pressure lines shall be minimum Class 200 PVC.

B. Asbestos Cement Pipe (ACP): Add the following to Standard Specifications Section 212–2.1.6 Asbestos Cement Pipe and Fittings: Fittings for ACP connection laterals shall be cast iron tees and bossed couplings except as follows:

1. Double strap service clamps with rubber seals and flat bronze straps may be used for connections of 50 percent or less than the diameter of pipe.
2. Tapped ACP couplings with brass inserts may be used for connections of 3/4, 1, 1–1/4, 1–1/2 and 2 inches.

C. Plastic Pipe: Add the following to Standard Specifications Section 212–2.1.3 Plastic Pipe for Use with Solvent Weld Socket or Threaded Fittings: All plastic pipe shall bear the following markings: manufacturer's name, nominal pipe size, schedule or class, type of material, pressure rating in PSI, NSF seal of approval, and date of extrusion.

Amend Standard Specifications Section 212–2.1.3 Plastic Pipe for Use with Solvent Weld Socket or Threaded Fittings to read: All plastic pipe fittings shall be standard weight schedule 40 and shall be injection molded of an improved PVC fitting compound. All threaded plastic fittings shall have injection molded threads. No cut threads will be accepted on PVC pipe and fittings. All tees and ells shall be manufactured in injection molds that are side–gated. All threaded nipples shall be standard weight schedule 80 with molded threads.

Amend first sentence of Standard Specifications Section 212–2.1.4 Plastic Pipe for Use with Rubber Ring Gaskets to read: "All rubber gasket PVC pipe, couplings and fittings shall conform to ASTM D 2241 Type 1, Grade 1, 2000–PSI design stress", and add the following to the Section: "Couplings, rubber gaskets, and fittings shall be as approved by the pipe manufacturer. Ring–type rubber gasket couplings shall permit a five (5) degree deflection of the pipe at each coupling (2–1/2 degrees each side) without exfiltration or infiltration, cracking or breaking.

D. Steel Pipe: Amend Standard Specifications Section 212–2.1.2 Steel Pipe to read: "All steel pipe shall be hot–dipped galvanized,....", and add: "All fittings for steel pipe shall be 250 pound rated galvanized malleable iron, banded pattern. Pipe sizes indicated on the Plans are nominal inside diameter, unless otherwise noted."

2.07 VALVE BOXES AND VALVES:

A. Boxes:

1. Concrete Valve Boxes: Add the following to Standard Specifications Section 212–2.2.7 Valve Boxes: All remote control valve boxes shall be rectangular concrete boxes with non–hinged locking cast–iron covers. Valve station number shall be stenciled in two–inch–high (2") numerals on cover using epoxy resin base paint of a contrasting color. Gate valve boxes shall be round concrete boxes with non–hinged locking cast iron covers marked either "Gate Valve" or "G. V." with letters cast or tooled in the cover.

B. Valves:

1. Gate Valves: All gate valves shall be capable of withstanding a minimum working pressure of not less than 150 psi.
2. Manual Control Valves: Add the following to Standard Specifications Section 212–2.2.3 Manual Control Valves: Anti–siphon–type valves shall be all bronze with swivel–type replaceable seating members and an approved vacuum breaker as an integral part of assembly.
3. Quick–Coupling Valves: Add the following to Standard Specifications Section 212–2.2.6 Quick Coupling Valves and Assemblies: Quick coupling valves shall have locking vinyl cover and shall be 1" in size.
4. Remote Control Valves: Add the following to Standard Specifications Section 212–2.2.4 Remote Control Valves: Valves shall be spring–loaded, self–cleaning, packless diaphragm activated, of a normally closed type.

Valve solenoid shall be corrosion–proof and constructed of stainless steel molded in epoxy to form one integral unit, and shall be 24 volt A.C., 2.0 watt maximum (2" and smaller valves).

Valve shall close against flow without chatter and with minimum closing surge pressure (minimum 5 seconds closing time per valve).

Valve shall be completely serviceable in the field without removing valve body from line.

D. Grades: Before starting Work of this Section, the Contractor shall obtain the written acceptance of the City of the fine grades, and written authorization for the Work of this Section to proceed. The Contractor is to keep within the specified material depths with respect to finish grade. Failure to obtain such written acceptance may subject the Contractor to adjusting the grades or depth of lines in order to achieve acceptable depths of cover, all as directed by the City and at no additional cost to the City.

E. Coordination with Work of Other Trades: Make all necessary measurements in the field to ensure precise fit of items in accordance with the original design. The Contractor shall coordinate the installation of all irrigation materials with all other Work. Special attention shall be given to coordination of piping locations versus tree and shrub locations and sleeve locations versus pavement installation to avoid conflicts.

F. Maintain Record Prints: The Contractor shall maintain "record" prints on site at all times. Upon completion of the Work, transfer all "record" information on changes and dimensions to reproducible sepia prints. The changes and dimensions shall be recorded in a legible and workmanlike manner, to the satisfaction of the Park Projects Inspector.

3.02 TRENCHING AND BACKFILLING:

A. Trenching:

1. Add the following to Standard Specifications Section 308–2.2 Trench Excavation and Backfill: Dig trenches and support pipe continuously on bottom of ditch. Where lines occur under paved areas, depth dimensions shall be considered below subgrade.
2. Amend Standard Specifications Section 308–2.2, Subparagraph 2 Waterlines continuously pressurized) to read: Water lines continuously pressurized – minimum 18 inches, maximum 24 inches. (These measurements are to be from subgrade elevation for piping under pavement.)
3. Amend Standard Specifications Section 308–2.2, Subparagraph 3 Lateral sprinkler lines) to read: Lateral irrigation lines – minimum 12 inches and maximum 16 inches.
4. Add the following to Standard Specifications Section 308–2.2 Trench Excavation and Backfill: Where it is necessary to excavate adjacent to existing trees, the Contractor shall avoid injury to trees and tree roots. Excavation in areas where 2–inch and larger roots occur shall be done by hand. All roots 2 inches and larger in diameter shall be tunneled under and shall be heavily wrapped with wet burlap to prevent scorring or drying. Where trenching machine is run close to trees having roots smaller than 2 inches in diameter, the wall of the trench adjacent to the tree shall be hand trimmed, making a clean cut through the roots. Roots 1 inch and larger in diameter shall be painted with two coats of tree seal or approved equal. Trenches adjacent to trees shall be closed within 24 hours.
5. Permanent Resurfacing: Add the following to Standard Specifications Section 308–5.1 General: All surface improvements damaged or removed as a result of the Contractor's operations shall be reconstructed by the Contractor to the same dimensions, except for pavement thickness, and with the same type materials used in the original Work. Trench resurfacing shall be 1 inch greater in thickness than existing pavement. Concrete pavement shall be removed and replaced in "full panels" with no horizontal dimension less than five (5) feet. The Contractor shall review the planned limits and lines of concrete removal and replacement with the Park Projects Inspector prior to saw–cutting for Removal Work.

B. Backfill: Amend Standard Specifications Section 308–2.2 Trench Excavation and Backfill to read: Backfill shall be uniformly tamped in 4–inch layers under and around the pipe for the full width of the trench and the full length of the pipe. Materials shall be sufficiently damp to permit thorough compaction, free of voids. Backfill shall be compacted to dry density equal to adjacent undisturbed soil and shall conform to adjacent grades.

Flooding in lieu of tamping is not allowed without specific prior written approval of the Soils Engineer and the Park Projects Inspector.

Under no circumstances shall the wheels of any vehicle not designed for the purpose of soils compaction be used to compact backfill.

3.03 PIPE INSTALLATION:

A. General: Add the following to Standard Specifications Section 308–5.2.1 Irrigation Pipeline Installation, General:

1. Piping under existing pavement may be installed by jacking, boring, or hydraulic driving. However, no hydraulic driving is permitted under asphaltic concrete pavement.
2. Cutting or breaking of existing pavement is not permitted except as approved by Park Projects Inspector. When approved, all necessary repairs and replacements will be made at no additional cost to the City.
3. Carefully inspect all pipe and fittings before installation, removing all dirt, scale and burrs and reaming; install pipe with all markings up for visual inspection and verification.
4. The Contractor shall install concrete thrust blocking per the manufacturer's recommendations at all changes of direction and terminal points of pressure pipe.
5. Parallel lines shall not be installed directly over one another. Provide a minimum of 12" horizontal separation for all parallel lines.
6. For plastic–to–metal connections, work the metal connections first. Use a non–hardening pipe dope on all threaded plastic–to–metal connections, except where noted otherwise.
7. All piping under pavement shall be sleeved using schedule 40 PVC sleeves. Each line shall be separately sleeved.
8. Do not install multiple assemblies ("manifold") on plastic lines. Provide each equipment assembly (e.g. RCV, quick coupler, gate valve, head, backflow device) with its own connection to its service line.

B. Plastic Pipe: Add the following to Standard Specifications Section 308–5.2.3 Plastic Pipeline:

1. Exercise care in handling, loading, unloading and storing plastic pipe and fittings, store plastic pipe and fittings under cover until ready to install; transport plastic pipe on a vehicle with a bed long enough to allow pipe to lay flat, avoid undue bending and any concentrated external load.
2. 360 applicators shall be used to apply primer and solvent on pipe sizes 2–1/2 inches and larger.

PART 3 – EXECUTION

3.01 GENERAL: All Work shall conform with Section 308 of the Standard Specifications except as modified herein. No Work of this Section other than sleeving under pavement shall commence prior to the completion and acceptance of all Grading Work specified in Section 02210.

Add the following to Standard Specifications Section 308–5.1 General:

A. Irrigation System Design & Water Supply:

1. The irrigation system design is based upon an available water pressure of 75 p.s.i. at a flow rate of 34 g.p.m. Individual stations are designed to this minimum p.s.i. The system is also designed to operate at a pressure of 56 min. p.s.i. The Contractor shall verify the size of the existing water supply/meter and the existing operating water pressure at the water supply location shown on the Plans prior to starting construction. The Contractor shall notify the Park Projects Inspector in writing of any discrepancies noted. Failure to provide such written notification may cause the Contractor to provide for modifications to the irrigation system as necessary to provide for a fully operational system providing 100% coverage at the operating pressure available, all at no additional cost to the City.
2. Connection to, or the installation of, the water supply shall be at the location shown on the Plans. Minor changes caused by actual site conditions shall be made at no additional cost to the City.

B. Electrical Service: The Contractor shall provide electrical service as necessary and make 120 V connection to the irrigation controller.

C. Code Requirements: Prior to all Work of this Section, the Contractor shall carefully inspect the installed Work of all other trades and verify that all such Work is complete to the point where this installation may properly commence. Verify that the irrigation system may be installed in strict accordance with all pertinent codes and regulations, the original design, the referenced standards, and the manufacturer's recommendations.

In the event any equipment or methods indicated on the Plans or in the Specifications is in conflict with local codes, immediately notify the Park Projects Inspector prior to installing the Work. If this notification is not provided, the Contractor shall assume full responsibility for the cost of all revisions necessary to comply with all codes.

3.04 BACKFLOW INSTALLATION: Add the following to Standard Specifications Section 308–5.3 Installation of Valves, Valve Boxes, and Special Equipment: Install backflow assemblies at locations approved in the field by the Park Projects Inspector and at heights required by local codes.

3.05 VALVE AND VALVE BOX INSTALLATION: Amend Standard Specifications Section 308–5.3 Installation of Valves, Valve Boxes, and Special Equipment to read: Valves shall be the same size as the pipeline in which they are installed unless otherwise specified on the Plans. Valves shall be installed a minimum of three feet in horizontal distance apart, each with its own connection to the pressure main line.

Amend Standard Specifications Section 308–5.3 Installation of Valves, Valve Boxes, and Special Equipment to read: Install quick couplers and valve boxes per Parks and Recreation Department standard details.

Add the following to Standard Specifications Section 308–5.3 Installation of Valves, Valve Boxes, and Special Equipment: Valves shall be installed in shrub areas whenever possible. No valves or valve boxes other than quick coupler valves shall be installed within a designated athletic playing field.

3.06 IRRIGATION HEAD INSTALLATION: Amend Standard Specifications Section 308–5.4.1 Sprinkler Head Installation and Adjustment, General to read: Irrigation heads shall be installed as designated on the Plans and per Parks and Recreation standard details. Upon coverage testing of the system if 100% coverage is not afforded by the system as designed, additional heads shall be added as necessary to achieve 100% coverage. Up to 5% of the total number of heads in the system are to be added at no additional cost to the City. If a greater number of heads is needed, cost shall be as negotiated by change order.

3.07 CONTROLLER INSTALLATION: Add the following to Standard Specifications Section 308–5.5 Automatic Control System Installation:

3.08 CONTROLLER INSTALLATION: Add the following to Standard Specifications Section 308–5.5 Automatic Control System Installation: The controller location, as shown on the Plans, is diagrammatic. The final location of the controller shall be as approved by the Park Projects Inspector before installation. The Contractor shall coordinate the electrical service with this location. The controller shall be wall mounted within a LeMeur vandal resistent enclosure, unless noted otherwise on the Plans. Controller enclosure shall be located in shrub areas and/or adjacent to other hardscape items. Enclosure shall be painted with two coats of paint, color as approved; submit samples. A 4" thick concrete slab for maintenance access shall be provided, size approximately 15 sf., line, grade and dimensions as directed by the Park Projects Inspector.

Following establishment of the turf, the irrigation system may be programmed to operate during the periods of minimal use of the Project area (i.e., 11:00 p.m. through 6:00 a.m.).

3.09 WIRING: Add the following to Standard Specifications Section 308–5.5 Automatic Control System Installation: All splice connections shall occur in a valve box. All wire runs between the valve and the controller shall be a continuous run with no splices unless noted otherwise on the Plans.

All low voltage wiring splices shall be made–up as soldered connections, wrapped with a minimum of two (2) layers of electrical tape and sealed with Scotch–coat. Scotch–lok, Uni–pack, Penn–Ite, or other similar type connectors are not acceptable.

3.10 FINISHING AND TESTING: Amend Standard Specifications Section 308–5.6.2 Pipeline Pressure Test to read: Pressure test the mains – minimum 2 hours at 150 PSI. Add the following to Standard Specifications Section 308–5.6.2 Pipeline Pressure Test: Center–load all plastic pipe prior to pressure testing. The entire system shall be operating properly before any planting operations commence.

3.11 COMPLETION CLEANING: Add the following to Standard Specifications Section 308 LANDSCAPE AND IRRIGATION INSTALLATION: Upon completion of the Work, the Contractor shall smooth all ground surfaces, remove excess materials, rubbish, debris, etc., sweep adjacent streets, curbs, gutters, walkways and trails, and remove construction equipment from the premises.

END OF SECTION

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RIVERSIDE, CA 92506
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(909) 682-0162 FAX
CONTACT: BILL WOOLSEY

CITY OF RIVERSIDE
PUBLIC UTILITIES ELECTRIC

SIGNED DATE 7/6/04

REGISTERED LANDSCAPE ARCHITECT
JOSE A. ESTRADA
No. 2754
PRINCIPAL
6/30/04
RENEWAL DATE
STATE OF CALIFORNIA

HERMANN & ASSOCIATES
30 BELMONTE DRIVE
PALM DESERT, CA
92211
LIC# 2754
PH. (760) 776-0940
FAX (760) 776-0950
CONTACT: JOSE A. ESTRADA

MARK	REVISIONS	APPR.	DATE
△			

DESIGNED BY – DRAWN BY CHECKED BY

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE
DEPUTY P.W. DIRECTOR		
PRINCIPAL ENGINEER		
CHIEF P.W. INSPECTOR		
WATER PURVEYOR		
ELECTRIC PURVEYOR		
PLANNING DEPARTMENT		
PARKS DEPARTMENT		

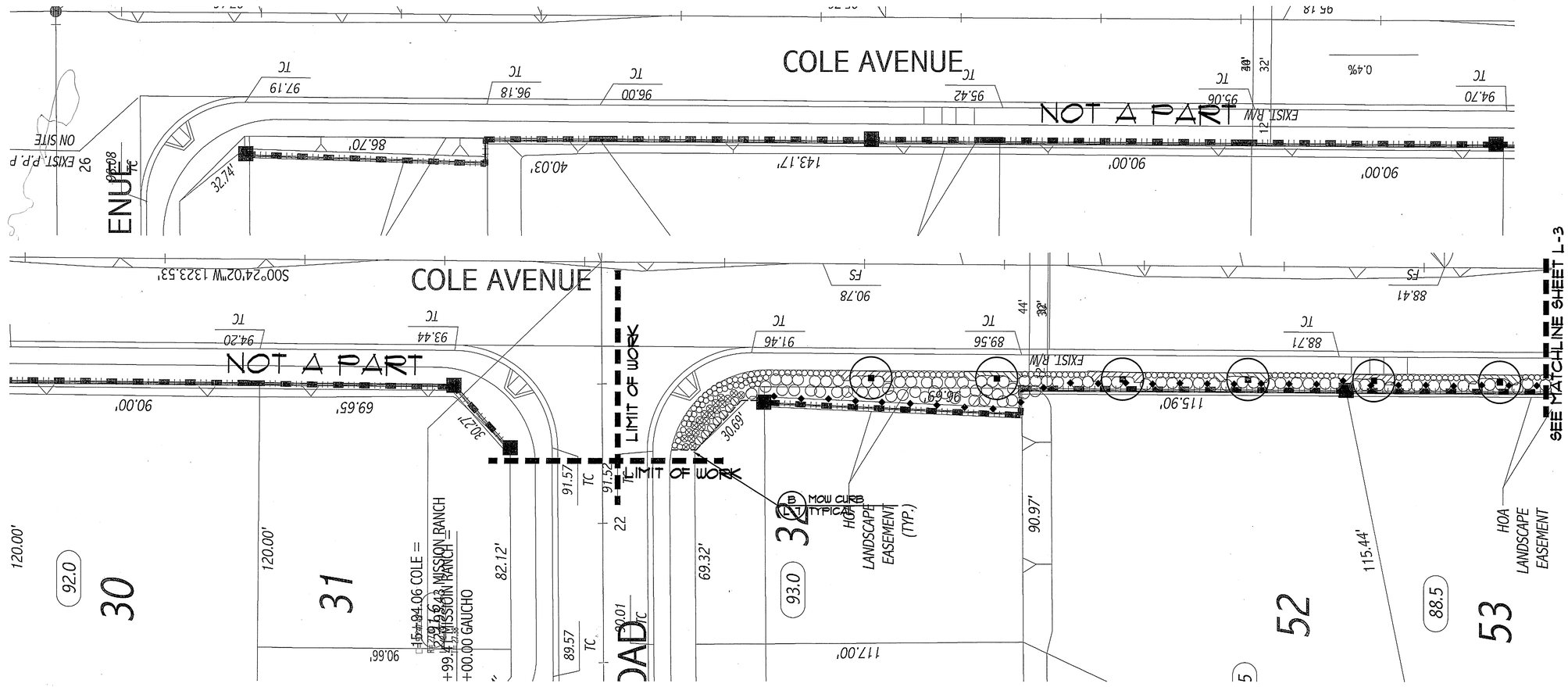
APPROVED BY
PUBLIC WORKS DIRECTOR
DATE 8/18/04

LANDSCAPE IMPROVEMENT PLANS
TRACT 31362
COLE AVE
REVERSE FRONTAGE LANDSCAPE
IRRIGATION SPECIFICATIONS
HORIZ. SCALE: NTS VERT. SCALE:

ACCT. NO.
R-3790-L
SHEET L-5 OF 8

PC-4404-R2/PRP04-0001

PLOT DATE: 6/2/04
File: TR 31362 _IR SPEC.dwg
INDEXED 9-23-04 GH



PLANTING LEGEND

SYMBOL	BOTANICAL NAME COMMON NAME	SIZE	REMARKS
TREES			
■	GEIJERA PARVIFLORA AUSTRALIAN WILLOW	15 GAL.	INSTALL PER CITY STD. DETAILS
SHRUBS			
○	HEMEROCALLIS HYBRIDS EVERGREEN DAYLILY	1 GAL.	INSTALL PER CITY STD. DETAILS
⊗	PITTOSPORUM TOBIRA WHEELERI WHEELER'S DWARF	1 GAL.	
⊘	PHORMIUM TENAX 'BRONZE BABY'	5 GAL.	
◯	XYLOSMA C. COMPACTA XYLOSMA	5 GAL.	

SYMBOL	COMMON NAME	SIZE	REMARKS
GROUNDCOVERS			
▨	LANTANA MONTEVIDENSIS 'GOLD MOUND'	1 GAL.	30" O.C.
VINES			
◆	PARTHENOCISSUS TRICUSPIDATA BOSTON IVY	1 GAL.	STAKED 10' O.C.

NOTE: INSTALL MIN. 2" THICK LAYER OF TREE MULCH PER CITY STANDARDS THROUGHOUT ALL PLANTING AREAS.

0' 20' 40' 60'

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(909) 682-0162 FAX
CONTACT: BILL WOOLSEY

CITY OF RIVERSIDE
PUBLIC UTILITIES ELECTRIC
SIGNED 7/6/04 DATE

REGISTERED LANDSCAPE ARCHITECT
JOSE ANTONIO ESTRADA
2004
6/30/04
STATE OF CALIFORNIA

HERMANN & ASSOCIATES
30 BELMONTE DRIVE
PALM DESERT, CA
92211
LIC# 2754
PH. (760) 776-0940
FAX (760) 776-0950
CONTACT: JOSE A. ESTRADA

MARK	REVISIONS	APPR.	DATE

DESIGNED BY – DRAWN BY CHECKED BY

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE
DEPUTY P.W. DIRECTOR		
PRINCIPAL ENGINEER		
CHIEF P.W. INSPECTOR		
WATER PURVEYOR		
ELECTRIC PURVEYOR		
PLANNING DEPARTMENT		
PARKS DEPARTMENT		

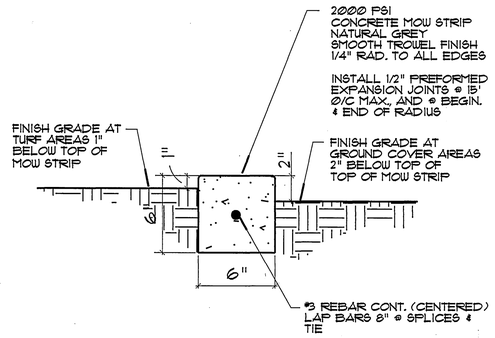
APPROVED BY
PUBLIC WORKS DIRECTOR
DATE 8/6/04

LANDSCAPE IMPROVEMENT PLANS
TRACT 31362
COLE AVE
REVERSE FRONTAGE LANDSCAPE
PLANTING PLAN / DETAILS
HORIZ. SCALE: 1" = 20' VERT. SCALE:

ACCT. NO. R-3790-1
SHEET L-6 OF 8

PLOT DATE: 8/25/04
File: TR 31362 _PP.dwg
INDEXED 9-23-04 GH

PC-4404-R2/PRP04-0001



B CONCRETE MOW CURB

PLANTING LEGEND

SYMBOL	BOTANICAL NAME COMMON NAME	SIZE	REMARKS
TREES			
■	GEIJERA PARVIFLORA AUSTRALIAN WILLOW	15 GAL.	INSTALL PER CITY STD. DETAILS
SYMBOL	COMMON NAME	SIZE	REMARKS
SHRUBS			
○	HEMEROCALLIS HYBRIDS EVERGREEN DAYLILY	1 GAL.	INSTALL PER CITY STD. DETAILS
⊗	PITTOSPORUM TOBIRA WHEELERI WHEELER'S DWARF	1 GAL.	
⊘	PHORMIUM TENAX 'BRONZE BABY'	5 GAL.	
◯	XYLOSMA C. COMPACTA XYLOSMA	5 GAL.	

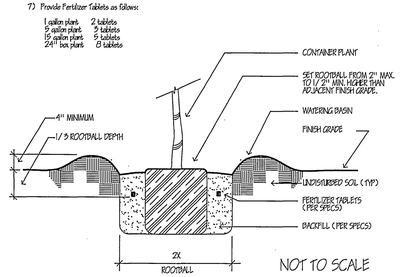
SYMBOL	COMMON NAME	SIZE	REMARKS
GROUNDCOVERS			
▨	LANTANA MONTEVIDENSIS 'GOLD MOUND'	1 GAL.	30" O.C.
SYMBOL	COMMON NAME	SIZE	REMARKS
VINES			
◆	PARTHENOCISSUS TRICUSPIDATA BOSTON IVY	1 GAL.	STAKED 10' O.C.

NOTE: INSTALL MIN. 2" THICK LAYER OF TREE MULCH PER CITY STANDARDS THROUGHOUT ALL PLANTING AREAS.

GENERAL PLANTING NOTES

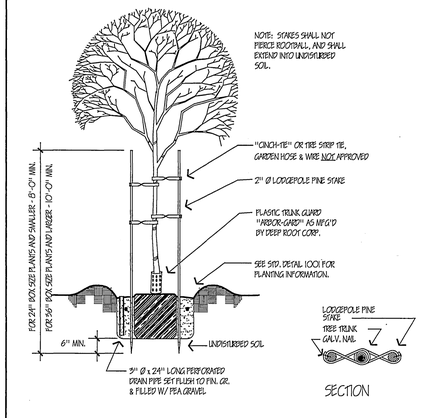
1) Contact the Park Projects Inspector at 951-6254 two working days (48 hours) prior to installing any plant material.
2) Trees planted in turf areas shall be maintained with a minimum 12" radius around the tree free of turf throughout the maintenance period.
3) Watering basins may be removed after the maintenance period.
4) For staking information as applicable, refer to Standard Detail 1002.
5) For caging information as applicable, refer to Standard Detail 1009.
6) For specification information, refer to City of Riverside Park and Recreation Department Standard Specifications, Section 02480 Planting.
7) Provide Fertilizer Tablets as follows:

1 gallon plant	2 tablets
5 gallon plant	5 tablets
15 gallon plant	5 tablets
24" box plant	8 tablets



NOT TO SCALE

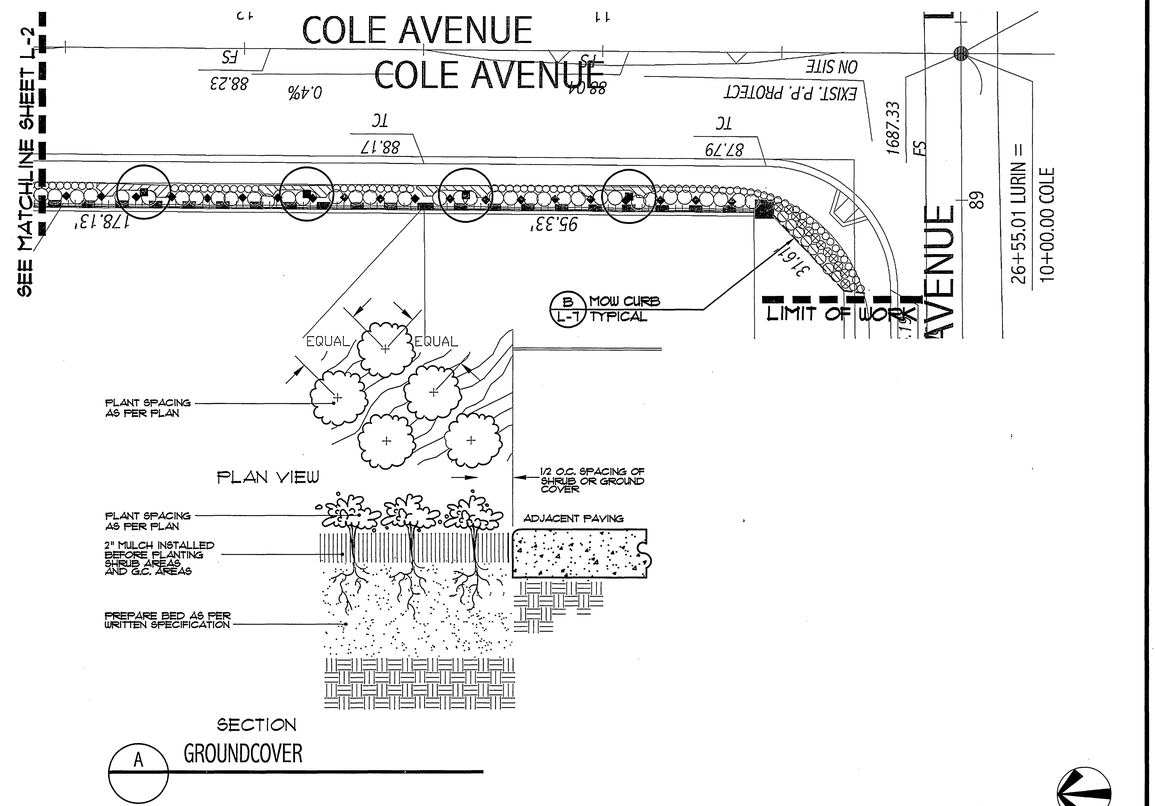
Approved	Date	Park and Recreation Department CITY OF RIVERSIDE	Detail No.
BJ	08/28/05		
Revised	Date	**PLANTING DETAIL**	1001



SECTION

NOT TO SCALE

Approved	Date	Park and Recreation Department CITY OF RIVERSIDE	Detail No.
BJ	08/28/05		
Revised	Date	**DOUBLE STAKING DETAIL**	1002



SECTION

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0' 20' 40' 60'

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CITY OF RIVERSIDE
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SIGNED DATE

REGISTERED LANDSCAPE ARCHITECT 2754 6/2/04 STATE OF CALIFORNIA

HEMANN & ASSOCIATES
30 BELMONTE DRIVE
PALM DESERT, CA
92211
LIC# 2754
PH. (760) 776-0940
FAX (760) 776-0950
CONTACT: JOSE A. ESTRADA

MARK	REVISIONS	APPR.	DATE

DESIGNED BY — DRAWN BY — CHECKED BY —

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE
DEPUTY P.W. DIRECTOR		
PRINCIPAL ENGINEER		
CHIEF P.W. INSPECTOR		
WATER PURVEYOR		
ELECTRIC PURVEYOR		
PLANNING DEPARTMENT		
PARKS DEPARTMENT	BJ	8/6/04

APPROVED BY
PUBLIC WORKS DIRECTOR
DATE 8/6/04

LANDSCAPE IMPROVEMENT PLANS
TRACT 31362
COLE AVE
REVERSE FRONTAGE LANDSCAPE
PLANTING PLAN / DETAILS
HORIZ. SCALE: 1" = 20' VERT. SCALE:

ACCT. NO.
R-3790-L
SHEET L-7 OF 8

PC-4404-R2/PRP04-0001

RPL
PLOT DATE: 6/2/04
File: TR 31362 _R.dwg
INDEXED 9-23-04 LH

PLANTING
SECTION 02480

PART 1 – GENERAL

1.01 RELATED DOCUMENTS:

A. Standard Specifications: The provisions of the Standard Specifications shall apply except as modified herein.

B. Reference Standards: American Association of Nurserymen Standards.

1.02 SCOPE: The Work of this Section shall consist of furnishing all labor, materials, equipment, appliances and services necessary for the execution and completion of all Planting Work as shown on the Plans and as described in the Specifications including, but not necessarily limited to, the following:

Soil preparation;
Finish grading (as distinguished from fine grading per Section 02210);
Planting trees;
Staking trees;
Planting shrubs and groundcover;
Soil erosion control;
Maintenance;
Plant establishment;
Coordination with Work of other Sections;
Testing;
Clean–up;
Replacements, Repairs, Guarantees and Warranty Work.

1.03 RELATED WORK:

Irrigation 02441

1.04 SOILS TEST: The Contractor shall notify the Park Projects Inspector upon completion of fine grading and prior to commencement of soil preparation work. The City will obtain agronomic soils tests for all planting areas after completion of fine grading and prior to start of soil preparation work. Tests will be performed by an approved agronomic soils testing laboratory and will include a fertility and suitability analysis with written recommendations for soil preparation, planting backfill mix, auger hole requirements, and post plant fertilization program. The soils report recommendations will take precedence over the minimum amendment and fertilizer application rates specified herein if and when they exceed the specified minimums. The Contractor shall allow a minimum two week period for the soils testing work commencing upon the Park Projects Inspector's acceptance of grade/the fine grading work per Section 02210.

1.05 GUARANTEE: The guarantee requirements of the Special Provisions are supplemented as follows as they pertain to the tree planting portion of the Work. All trees installed under the Contract shall be guaranteed against any and all poor, inadequate or inferior materials and/or workmanship for a period of one (1) year following the date the Project Notice of Completion is filed with the County Recorder. During the guarantee period, any trees found to be dead, missing, or in poor condition shall be replaced by the Contractor within ten (10) days of written notification. Park and Recreation Department shall be the sole judge as to the condition of the trees. Replacement shall be made in accordance with City standards. Material and labor involved in replacing trees shall be provided by the Contractor at no additional cost to the City.

1.06 INSPECTION:S: Inspections will be required. The Contractor shall contact the Park Projects Inspector at least 48 hours (2 working days) in advance of an anticipated inspection. An inspection will be required at each of the steps listed below:

A. Fine Grade Prior to Commencement of Soil Preparation: Upon completion of fine grading and prior to commencement of soil preparation, for acceptance of fine grading work/grade and taking of soils samples.

B. Finish Grade: Inspection of completed finish grading work following soil preparation work.

C. Plant Material: Inspection of plant materials upon delivery to the job site, but prior to planting.

D. Plant Locations: When container plants and/or bare root stock are spotted for planting, but before planting holes are excavated.

E. Completed Planting: When planting and all other indicated or specified work has been completed.

F. Chemical Applications: During application of pre–emergent chemical.

G. Start of Plant Establishment: At the start of the Plant Establishment Period.

H. End of the Plant Establishment: Prior to Final Acceptance of the Project for maintenance by the City, the project will be inspected for end of the Plant Establishment Period. Acceptance for maintenance will be confirmed in writing by the Park and Recreation Department.

1.07 SUBMITTALS: The following written certifications are required to be submitted to the Park Projects Inspector upon delivery of the respective materials to the job site:

Total Quantity of commercial fertilizers, by type
Total Quantity of soil amendments and conditioners, by type
Total Quantity of seed, by type
Total Quantity of mulch
Total Quantity of iron sulphate

1.08 PLANT ESTABLISHMENT PERIOD: The length of the Plant Establishment Period for public maintenance areas shall be for one year; regarding criteria to start, see also Subsections 3.12 Maintenance and Plant Establishment and 3.13 Start of Plant Establishment Period.

PART 2 – MATERIALS

2.01 GENERAL: All materials shall conform with Section 212 – Landscape and Irrigation Materials of the Standard Specifications except as modified herein.

2.02 FERTILIZER, SOIL AMENDMENTS AND CONDITIONERS: Add the following to Standard Specifications Section 212–1.2.3 Commercial Fertilizer:

A. Planting Tablets: Tightly compressed long–lasting, slow–release fertilizer tablets weighing 21 grams, with a potential acidity of not more than 5 percent by weight and having an analysis of 20–10–5 derived from the sources listed in the following guaranteed analysis:

GUARANTEED ANALYSIS

Total Nitrogen (N) 20%
Derived from urea formaldehyde
7.0% water soluble nitrogen
13.0% water insoluble nitrogen

Available Phosphoric Acid (P205). 10%
Derived from calcium phosphate

Soluble Potash (K20). 5%

Combined Calcium (Ca). 2.6%
Derived from calcium phosphates

Combined Sulfur (S). 1.6%
Derived from ferrous and potassium sulfates

Iron (expressed as elemental Fe) 35%
Derived from ferrous sulfate

B. Commercial fertilizer: Shall bear the manufacturer's guaranteed statement of analysis and shall meet the following minimum requirements: 16% nitrogen, 6% phosphoric acid, and 8% potash.

C. Organic Soil Amendment: Shall be type 1 organic soil amendment, wood based product, nitrogen stabilized, and free of foreign matter.

D. Soil Conditioners: Add to Standard Specifications, new Section as follows:

212–1.2.6 Inorganic Conditioners. Inorganic conditioners shall be agricultural grade gypsum, soil sulfur and iron sulfate. Iron sulphate shall be ferric sulphate or ferrous sulphate in pelleted or granular form containing not less than 18.5% iron, expressed as metallic iron, and shall be registered as an agricultural mineral with the State Department of Food and Agriculture in compliance with Chapter 5 "Fertilizing Materials", of Division 7 of the Food and Agriculture Code of California, commencing at Section 14501.

2.03 HEADERS, STAKES AND TIES: Add the following to Standard Specifications Section 212–1.5 Headers, Stakes and Ties:

A. Headers: Standard Specifications Section 212–1.5.2 Headers and Stakes replace with the following to read:

Headers shall be Concrete Headers/Mow Curbing – Concrete shall be 5 sack mix with a maximum slump test of four inches (4"). Provide sufficient concrete forming and stakes (maximum 3' o.c.) to provide continuous line without waving.

B. Tree Stakes: Shall be straight–grained lodgepole pine, or City approved equal. Stakes shall be free from knots, checks, split, or disfigurements.

C. Tree Ties: Shall be made from tire casing, 22" long by 3/4" wide, fastened to tree stake with two galvanized 5d roofing nails each.

2.04 JUTE NETTING: Jute netting shall be new and shall be of uniform, plain–weave, flame–retardant mesh. The mesh shall be dyed green and shall be made from unbleached single jute yarn. The yarn shall be of loosely twisted construction and shall vary in thickness by more than one–half its normal diameter. Jute netting shall be furnished in rolled strips and shall meet the following requirements:

Width – 48 inches, with a tolerance of one inch wider or narrower.
Minimum 78 warp ends per width of roll.
Minimum 41 weft ends per yard of length.
Weight shall average 1.22 pounds per linear yard, with a tolerance of 5 percent heavier or lighter.

2.05 PLANTS: Add the following to Standard Specifications Section 212–1.4 Plants:

A. General: Add the following to sub–section 212–1.4.1 General: All plants shall be true to name, with at least one of each bundle or lot tagged with the name and size in accordance with the American Association of Nurserymen Standards. In all cases, botanical names shall take precedence over common names. All plants and planting materials shall meet or exceed the specifications of Federal, State, and County Laws requiring inspection for plant disease and insect control.

B. Quality and Size:

1. Quality: All plant material shall comply with the definition for number one nursery stock per the current edition of "Horticultural Standards" as adopted by the American Association of Nurserymen.
2. Size: Add the following to Standard Specifications Sections 212–1.4.2 Trees and 212.1.4.3 Shrubs:
   a) All container plants supplied by the Contractor shall be of the specified standard height and diameter set by the American Standard for Nursery Stock. The height of the trees shall be measured from the root crown to the last division of the terminal leader and the diameter shall be measured six (6) inches above the crown roots.
   b) All palm trees shall be of a minimum overall height of 8 to 12 feet as measured from the crown of the rootball to the tips of the fronds, or four feet of brown trunk whichever is greater.
   c) All container grown plants shall be the size(s) as noted on the approved plans, but in no case less than a minimum 15 gallon container size, with minimum caliper and height in accordance with the American Association of Nurseryman standards for container plants. Where substitution of bare root stock is approved by the Street Tree Inspector, bare root stock shall conform to the American Nurserymen's Association standards. Minimum caliper shall be two (2) inch diameter and minimum height shall be twelve (12) feet.

C. Bare Root Stock: Shall conform to the American Nurserymen's Association standards. Minimum caliper shall be two (2) inch diameter and minimum height shall be twelve (12) feet.

D. Cuttings: Modify Standard Specifications Section 212–1.4.6 Cuttings to read: All cuttings used on the project shall be fully rooted cuttings unless otherwise approved in writing by the City.

2.06 MULCH: Shall be a ground wood product as produced through a wood chipper, and shall consist of twigs and branches with pieces of a maximum size of 1/2" diameter by 4" long, free of seeds, trash and other inert non–organic materials.

PART 3 – EXECUTION

3.01 GENERAL: All Work shall conform with Section 308 LANDSCAPE AND IRRIGATION INSTALLATION of the Standard Specification, except as modified herein.

At the Contractor's option, subject to the Park Project Inspector's acceptance of the material available and the appropriateness of the planting season, bare root stock may be substituted for the required 15 gallon and 24" box tree species if commercially available as bare root plantings and provided the corresponding minimum caliper and height requirements of Subsection 2.06 PLANTS, Subparagraph C. Bare Root Stock above are met, all at no change in contract price.

3.02 WEED CONTROL MEASURES: Upon completion of all fine grading work and prior to soil preparation, perform weed control measures as follows:

1. Irrigate all areas designated to be planted for a minimum of 10 minutes per setting, two settings per day for seven days to germinate all weed seed possible.
2. Apply a contact weed killer and allow sufficient time to obtain complete kill of all weeds germinated.
3. Repeat step one above.
4. Repeat step two above.

3.03 SOIL PREPARATION: Add the following to Standard Specifications Section 308–2.3 Topsoil Preparation and Conditioning:

A. Work Sequence: All fine grading and mounding per Section 02210 and weed control measures shall be completed prior to soil preparation. Soil Preparation Work shall not commence until the agronomic soils test has been completed. Should 30 calendar days elapse between completion of soil preparation and commencement of planting, all areas shall be prepared again.

B. Excluded Areas: Planting areas with slopes 3:1 and steeper shall not be soil prepared. In lieu of soil preparation, such slopes will require fertilizer tablets for all plantings as specified below.

C. Soil Preparation: In all planting areas with gradients less than 3:1, areas to be soil prepared shall first be cross ripped to a minimum depth of 6" with tractor tines spaced at maximum 18" on center. Following cross–rip operations, a layer of soil amendments shall be spread and rototilled into the soil to a minimum depth of 4 inches, or as recommended by the soils report, so that the soil shall be loose, friable, and free from rocks, sticks, and other objects undesirable to planting.

D. Amendment Application Rates: The following soil amendments shall be added per 1,000 square feet to all planting areas with gradients less than 3:1 (agronomic soil test recommendations shall take precedence where these minimum amounts are exceeded):

1. 6 cubic yards Type I organic soil amendment.
2. 15 pounds commercial fertilizer.
3. 100 pounds gypsum.
4. Soil sulfur per soils report.

3.04 FINISH GRADING: The Contractor shall finish grade all planting areas filling as needed or removing surplus dirt, raking to remove all rocks and debris over 1 inch in diameter, and floating to a smooth uniform grade. All areas shall slope to drain. Grade lines shall be established to roads, curbs, drainage swales and inlets, and/or sidewalks as shown on the Plans and as directed. All fill material placed within the top 12" from finish grade elevations in all planting areas shall be topsoil.

All landscape areas shall be finish graded to "dress out", maintain, and/or re–establish finish grades and flow lines as approved prior to amending the soil. Contractor shall call for inspection upon completion of finish grading work. Contractor shall not proceed with planting work until finish grades have been inspected and accepted by the Park Projects Inspector.

3.05 EROSION CONTROL: Add new section to the Standard Specifications:

308–4.9.6 Jute Netting. All slopes areas exceeding 3:1 shall receive jute netting. Netting shall also be provided during the Plant Establishment Period, when and as directed by the Park Projects Inspector, along flow lines and other locations where erosion is evident. Jute netting shall be installed loosely, up and down the slope. The installed netting shall fit the soil surface contour and shall be held in place by 9–inch long, 11–gage (minimum) steel wire staples driven vertically into the soil at approximately 24–inch spacing. Jute netting strips shall overlap along the sides at least 6 inches. Ends of strips shall be buried into the soil at least 6 inches. Lap all ends of rolls a minimum of 24".

3.06 INSPECTION OF CONTAINER PLANTS: The root condition of plants furnished in containers will be checked by the Park Projects Inspector by removal of earth from the roots of not less than two plants nor more than 2% of the total number of plants of each species or variety from a single source and proposed for use in the Work. When container–grown plants are from several different sources, the roots of not less than two plants of each species or variety from each source may be checked by the Inspector at his option. The selection of plants to be checked will be made by the Park Projects Inspector.

All plants rendered unsuitable for planting by virtue of this inspection shall be considered as samples, and replacements shall be provided at no additional cost. In case the sample plants are found to be defective, the entire lot or lots of plants represented by the defective samples will be rejected.

3.07 PLANTING BACKFILL:

A. Mixing: All backfill materials shall be bulk mixed, not individually mixed at each plant pit.

B. Proportions: Backfill for planting pits shall be enriched using the following blend per cubic yard (agronomic soil test recommendations shall be reviewed prior to soil mixing):

1. Container Plants:
   60% top soil 3 lbs. gypsum
   40% Type I Organic Amendment 2 lbs. iron sulphate
   2 lbs. commercial fertilizer
2. Bare Root Stock:
   10% wood shavings 90% top soil
   fertilizer and soil conditioners as specified for container plants.

3.08 PLANTING:

A. Tree and Shrub Planting: Add the following to the Standard Specification Section 308–4.5 Tree and Shrub Planting:

1. Soil surrounding planting pit shall be in a friable condition and moist to a depth of 8".
2. Backfill using specified soil mix to within 8" of finish grade. At this depth, place the plant fertilizer tablets Agriform 20–10–5, 21 grams each, or City approved equal. A minimum of 1 tablet for 1 gallon, 3 tablets for 5 gallons, 5 tablets for 15 gallons, and 8 tablets for a 24" box. Complete backfilling to finish grade.
3. Trees (other than relocated palms) shall be planted at such a depth that the crown roots bear the same relative position to finish grade as they did to the soils where they were grown. Backfill after planting shall be compacted carefully into place without injuring the roots of the tree or breaking up the ball of earth surrounding the roots.

B. Groundcover and Vine Planting: Add the following to Standard Specifications Section 308–4.7 Groundcover and Vine Planting:

1. On slopes exceeding 3:1 ratio, apply 5 gram Agriform tablets, one per plant in lieu of soil preparation work.
2. Mulch and fertilize groundcover areas using 1.5 cubic yards of wood shavings and 5 lbs. of the specified commercial fertilizer per 1,000 square feet. Repeat fertilization at 30 day intervals throughout the duration of the Contract up to 4 applications, after which decrease frequency to once every 90 days.
3. All groundcover and bare dirt areas shall be treated with a pre–emergent chemical (subject to approval by the Park Inspector prior to application). Chemicals shall be applied by a licensed Pest Control Agent. This treatment shall be applied at the following times during the Contract: a) before planting, b) at beginning of Plant Establishment Period, and c) at end of Plant Establishment Period. The Park Projects Inspector, (909) 352–6254, shall be given a minimum of 48 hours (2 working days) notice prior to each application. No chemicals shall be applied other than in the presence of the Inspector.

3.09 TREE STAKING: Amend the Standard Specifications Section 308–4.6.1 Method A Tree Staking and 308.4.6.2 Method B Tree Staking to read: Stake trees in accordance with the Park and Recreation Department's standard detail.

3.10 NOT USED

3.11 WATERING: Add the following to Standard Specifications Section 308–4.9.5 Watering:

A. Responsibility: It shall be the Contractor's responsibility to maintain a balanced watering program to ensure proper growth until Final Acceptance of the Work.

B. Initial Watering: Immediately after planting, apply water to each plant. Apply water in a moderate stream in the planting hole until the material about the roots is completely saturated from the bottom of the hole to the top of the ground.

C. Ongoing Watering: Apply water in sufficient quantities and as often as seasonal conditions require to keep the planted areas moist at all times, well below the root system of plants.

D. Irrigation:

1. The Contractor shall properly and completely maintain the irrigation system. A balanced water program shall be maintained to ensure proper germination and growth until Final Acceptance of the Work. Plants which cannot be watered sufficiently with the irrigation system shall be watered by means of a hose.
2. All controllers are to have each station individually adjusted on a weekly basis. System shall be set considering the application rate each area is capable of receiving. The system shall operate on short intervals, with the cycle repeating at a later time to reduce runoff.

3.12 MAINTENANCE AND PLANT ESTABLISHMENT: Amend the first sentence of Standard Specifications Section 308–6 MAINTENANCE AND PLANT ESTABLISHMENT to read:
"The Contractor shall maintain all areas within the Work Limits of this Contract on a continuous basis...until Final Acceptance".

3.13 START OF PLANT ESTABLISHMENT: Add the following to Standard Specifications Section 308–6 MAINTENANCE AND PLANT ESTABLISHMENT:

Criteria for Start of Plant Establishment Period:
1. The Plant Establishment Period shall not start until all elements of the Project that impact the landscape are completed in accordance with the Contract Documents. Projects will not be segmented into phases.
2. Permanent power to remote controllers shall be established.
3. The Plant Establishment Period for the Project shall not begin until all planting have been installed and are accepted by the Park Project Inspector.
4. Written acceptance of the City must be obtained to start the Plant Establishment Period.
5. If the project maintenance fails to continuously meet standards required, the Plant Establishment Period "day count" will be suspended and will not recommence until the Contractor has corrected all deficiencies.

3.14 MAINTENANCE TASKS: Add the following to Standard Specifications Section 308–6 MAINTENANCE AND PLANT ESTABLISHMENT:

A. General: During the contract period provide all watering, weeding, mowing, fertilizing and cultivation and spraying necessary to keep the plants and turf in a healthy growing condition and to keep the planted areas neat, edged, and attractive. All shrubs planted by the Contractor shall be pinched and pruned as necessary to encourage new growth and to eliminate rank sucker growth. Old wilted flowers and dead foliage shall be immediately pinched or cut off. Do not prune trees without written approval of the City.

B. Iron Chlorosis: After planting and during the Plant Establishment Period, in the event that any plantings exhibit iron chlorosis symptoms, apply FE 138 Geigy or equivalent at manufacturer's recommended rates.

C. Replacement Plantings: During the Plant Establishment Period, should the appearance of any planting installed by the Contractor indicate weakness, that plant shall be replaced immediately with a new, healthy plant. At the end of the Plant Establishment Period, all plant materials shall be in a healthy, growing condition and spaced as indicated on the plans.

D. Fertilization: The Contractor shall apply commercial fertilizer to and all groundcover areas at a rate of 5 pounds per 1,000 square feet, at 30–day intervals, for 3 applications as a minimum, above and beyond the original soil preparation application.

E. Planting Establishment: All planting areas that do not show a prompt establishment of plant material shall be replanted at 10–day intervals until the plant material is established. If a good rate of growth has not been demonstrated within 30 days of first planting/hydroseeding, the Contractor shall be responsible to determine the appropriate horticultural practices necessary to obtain good growth. The Contractor shall obtain agronomic soils testing of all areas not showing good growth and shall provide copies of the test results to the City to verify the appropriateness of all maintenance work performed. If additional soil amendments are needed, up to a maximum 25% beyond the application rate specified, such amendments shall be provided by the Contractor at no additional cost to the City.

F. Grading and Drainage: During the Plant Establishment Period all flow lines shall be maintained to allow for free flow of surface water. Displaced material which interferes with drainage shall be removed and placed as directed. Low spots and pockets shall be graded to drain properly. Jute netting shall be installed at flow lines and other locations where erosion is evident, when directed by the Park Projects Inspector.

1. Damage to planting areas shall be repaired immediately and throughout the Plant Establishment Period. Depressions caused by vehicles, bicycles, or foot traffic shall be filled and leveled. Replant damaged areas.
2. All paved areas shall be washed and maintained in a neat and clean condition at all times.
3. All subsurface drains and inlets shall be periodically cleared of debris, leaves and trash and flushed with clear water to avoid build up of silt and debris.
4. Debris and trash shall be removed from the site daily.

G. Disease and Pest Control: Throughout the Plant Establishment Period, all plants shall be maintained in a disease and pest free condition. A licensed pest control operator shall be retained by the Contractor to recommend and apply all pesticides, herbicides, and fungicides. Exterminate gophers, moles, and all other rodents, and repair damage.

3.15 END OF PLANT ESTABLISHMENT PERIOD: Add the following to Standard Specification Section 308–6 MAINTENANCE AND PLANT ESTABLISHMENT:

A. Request for Inspection: When the Contractor believes he has completed the Plant Establishment Period and the Project is ready for Final Acceptance, he shall request inspection of the Project. The City will inspect the Project for Final Acceptance. Deficiencies noted during inspection shall extend the Plant Establishment Period until all are corrected.

B. Established Plantings: All planting areas shall show a good rate of growth and shall be well established "filled in" plantings free of voids. Bare areas will be unacceptable. The Contractor shall provide plantings from flats as necessary to fill in all bare areas. Such plantings shall be planted a minimum of 10 days prior to the end of the Plant Establishment Period and shall have roots "knit–in" to the native soil.

C. Written Acceptance: Final Acceptance shall occur only upon written acceptance of the Project for maintenance by the City.

3.16 CLEAN UP: Upon completion of the Work, the Contractor shall smooth all ground surfaces; remove excess materials, rubbish, debris, etc.; sweep adjacent streets, curbs, gutters; wash down all walkways, and trails; and remove construction equipment from the premises.

END OF SECTION

CALL BEFORE YOU DIG
DIG ALERT
DIAL TOLL FREE
1-800-422-4133
AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

PREPARED FOR:
SHEFFIELD HOMES
3400 CENTRAL AVE - SUITE 325
RIVERSIDE, CA 92506
(909) 682-5352
(909) 682-0162 FAX
CONTACT: BILL WOOLSEY

CITY OF RIVERSIDE
PUBLIC UTILITIES ELECTRIC
SIGNED DATE 7/6/04

REGISTERED LANDSCAPE ARCHITECT
JOSE A. ESTRADA
No. 2754
Renewal 8/31/04
STATE OF CALIFORNIA

HERMANN & ASSOCIATES
30 BELMONTE DRIVE
PALM DESERT, CA
92211
LIC# 2754
PH. (760) 776-0940
FAX (760) 776-0950
CONTACT: JOSE A. ESTRADA

MARK	REVISIONS	APPR.	DATE

DESIGNED BY – DRAWN BY CHECKED BY

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE
DEPUTY P.W. DIRECTOR		
PRINCIPAL ENGINEER		
CHIEF P.W. INSPECTOR		
WATER PURVEYOR		
ELECTRIC PURVEYOR		
PLANNING DEPARTMENT		
PARKS DEPARTMENT		

APPROVED BY
PUBLIC WORKS DIRECTOR
DATE 8/16/04

LANDSCAPE IMPROVEMENT PLANS
TRACT 31362
COLE AVE
REVERSE FRONTAGE LANDSCAPE
PLANTING SPECIFICATIONS
HORIZ. SCALE: NTS VERT. SCALE:

ACCT. NO. R-3790-L
SHEET L-8 OF 8

PLOT DATE: 6/2/04 File: TR 31362 _PP_SPEC.dwg INDEXED 9-23-04 GH

PC-4404-R2/PRP04-0001